

Approved For Release 2010/09/27 : CIA-RDP85-10655R00000001-0

CIA OER WORLD OIL 71 STATISTICAL SUMMARY

UNCLASSIFIED

1971

01 of 02

For Release 2001/05/28 : CIA-RDP80-00875R

# **WORLD OIL**

## **statistical summary**

### **1971**

*File IN OER Misc*

*CIA/OER/WorldOil '71*

## CONTENTS

Page

## WORLD SUMMARIES

<i>World Oil Trade Movements, 1970 (map)</i>	
<i>World Petroleum Reserves, 1970 (map)</i>	
<i>World Oil Reserves, 1970 (chart)</i>	
<i>World Oil Reserves and Production, 1970 (chart)</i>	
<i>World Crude Oil Production, 1970 (chart)</i>	
<i>Growth in World Crude Oil Production by Main Areas (chart)</i>	
<i>World Petroleum Production and Consumption, 1970 (chart)</i>	
<i>World Gas Production, 1970 (chart)</i>	

## PERSIAN GULF AREA

<i>Persian Gulf Area (map)</i>	
<i>Persian Gulf Area Oil Summary, 1970 (chart)</i>	
<i>Summary of Gas and Oil Production for the Persian Gulf Area (table)</i>	1
Abu Dhabi	2
Bahrain	4
Dubai	7
Iran	9
Iraq	14
Kuwait	17
Oman	20
Qatar	22
Saudi Arabia	25
<i>Persian Gulf Area Refineries (table)</i>	28
<i>Iraq Petroleum Company (IPC) Pipelines (table)</i>	29

## SOUTHERN MEDITERRANEAN SEA AREA

<i>Southern Mediterranean Sea Area (map)</i>	
<i>Southern Mediterranean Sea Area Oil Summary, 1970 (chart)</i>	
<i>Summary of Gas and Oil Production for the Southern Mediterranean Sea Area (table)</i>	30
Algeria	31
Egypt	35
Israel	39
Libya	42
Syria	47
<i>Southern Mediterranean Sea Area Refineries (table)</i>	51

## SUB-SAHARA AFRICA

<i>Sub-Sahara Africa (map)</i>	
<i>Sub-Sahara Africa Oil Summary, 1970 (chart)</i>	
<i>Summary of Gas and Oil Production for Sub-Sahara Africa (table)</i>	52
Nigeria	53
<i>Sub-Sahara Africa Refineries (table)</i>	57

## WESTERN HEMISPHERE

<i>Western Hemisphere (map)</i>	
<i>Western Hemisphere Oil Summary, 1970 (chart)</i>	
<i>Summary of Gas and Oil Production for the Western Hemisphere (table)</i>	58
<i>Venezuela</i>	59
<i>Western Hemisphere Refineries (table)</i>	64

## WESTERN EUROPE

<i>Western Europe (map)</i>	
<i>Western Europe Oil Summary, 1970 (chart)</i>	
<i>Summary of Gas and Oil Production for Western Europe (table)</i>	69
<i>Western Europe Refineries (table)</i>	70

## ASIA-PACIFIC AREA

<i>Asia-Pacific Area (map)</i>	
<i>Asia-Pacific Area Oil Summary, 1970 (chart)</i>	
<i>Summary of Gas and Oil Production for the Asia-Pacific Area (table)</i>	75
<i>Indonesia</i>	76
<i>Asia-Pacific Area Refineries (table)</i>	79

## OIL TANKERS

<i>Average Size of Tankers (chart)</i>	
<i>Tanker Ownership, 1970 (chart)</i>	
<i>World Tanker Fleet by Flag, 1970 (table)</i>	82
<i>World Tanker Fleet by Size (table)</i>	82
<i>Comparative Tanker Size (chart)</i>	

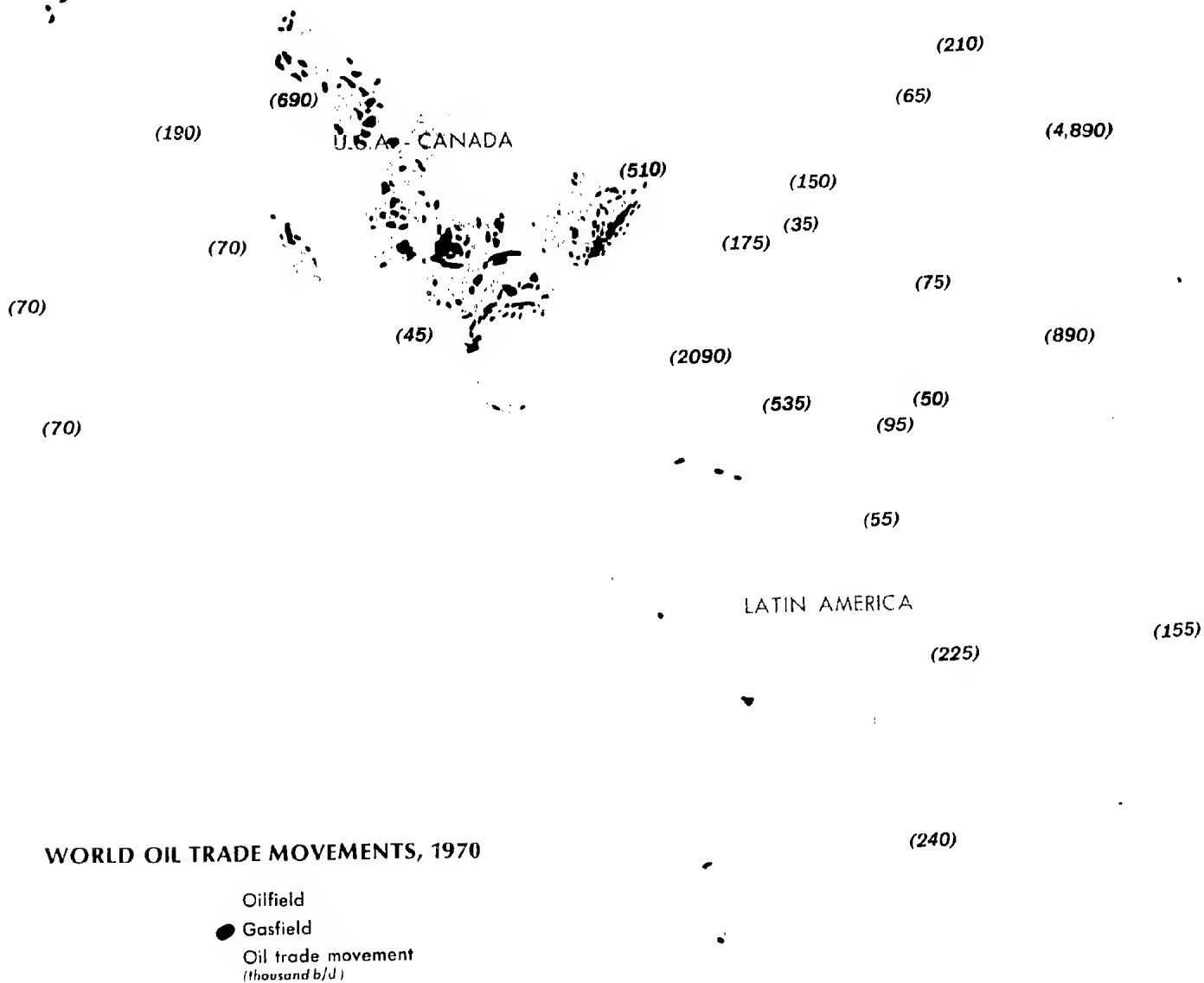
## CRUDE OIL POSTED PRICES AND PETROLEUM CONVERSION FACTORS

<i>Crude Oil Posted Prices (table)</i>	83
<i>Petroleum Conversion Factors (table)</i>	84

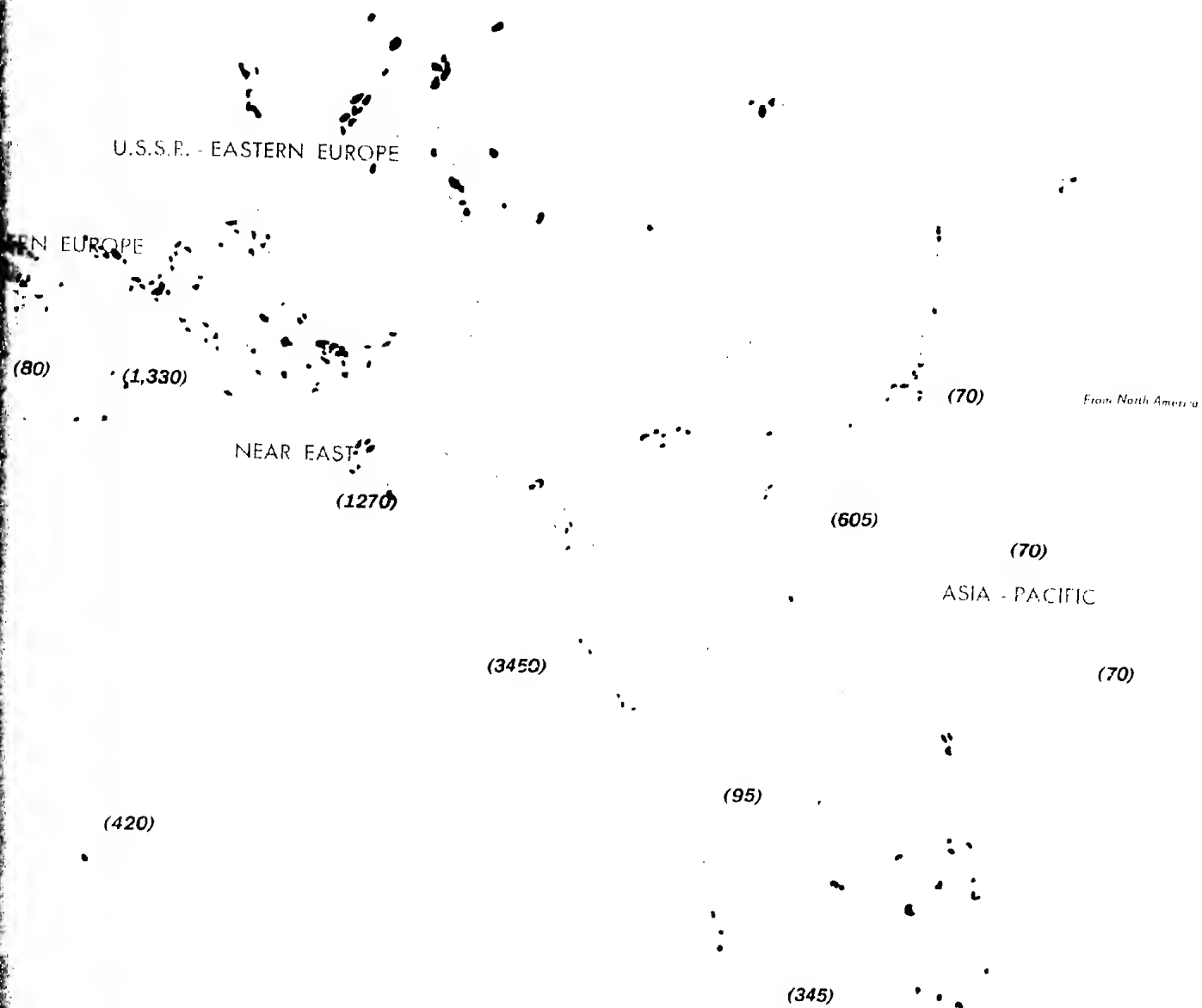
## GLOSSARIES

<i>Glossary of Technical Terms</i>	85
<i>Glossary of Company Names and Organizations</i>	87
<i>Company Directory</i>	89

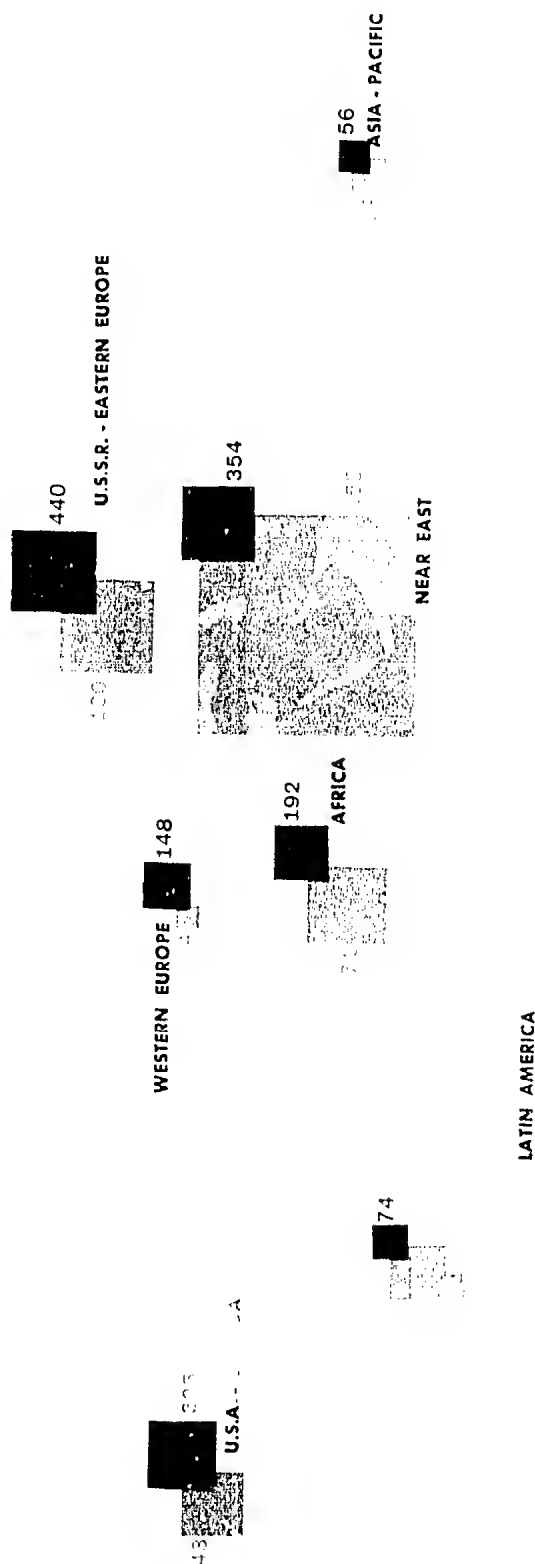
## WORLD SUMMARIES









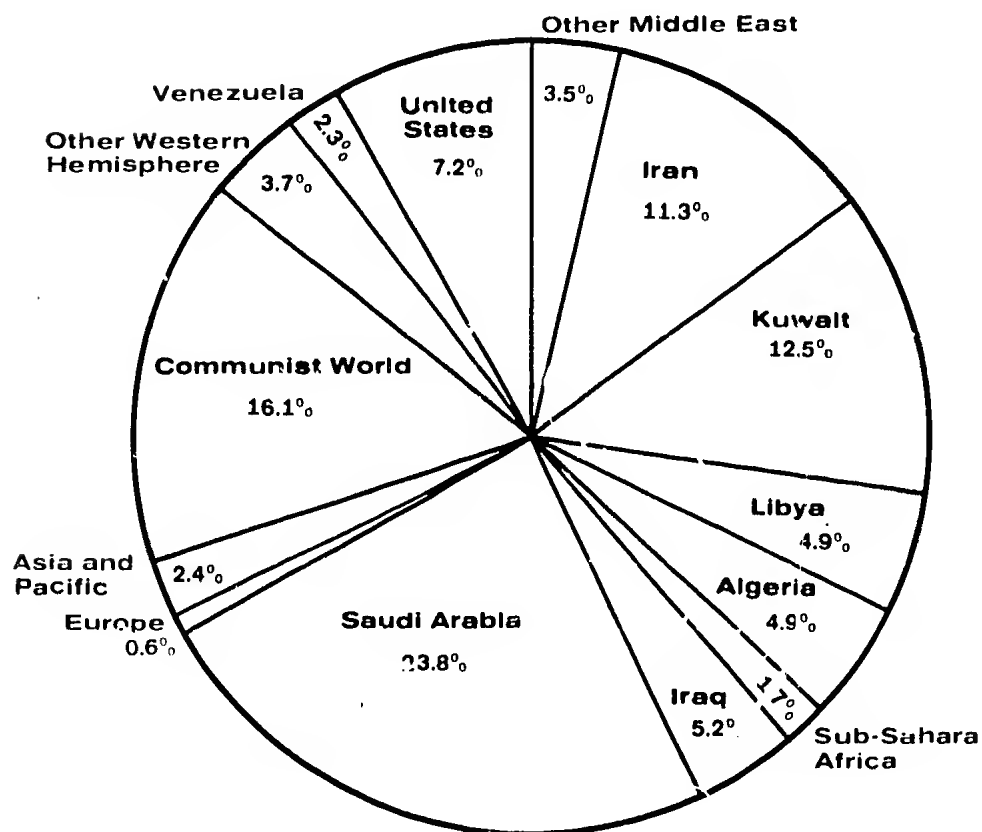


# WORLD PETROLEUM RESERVES

END OF 1970

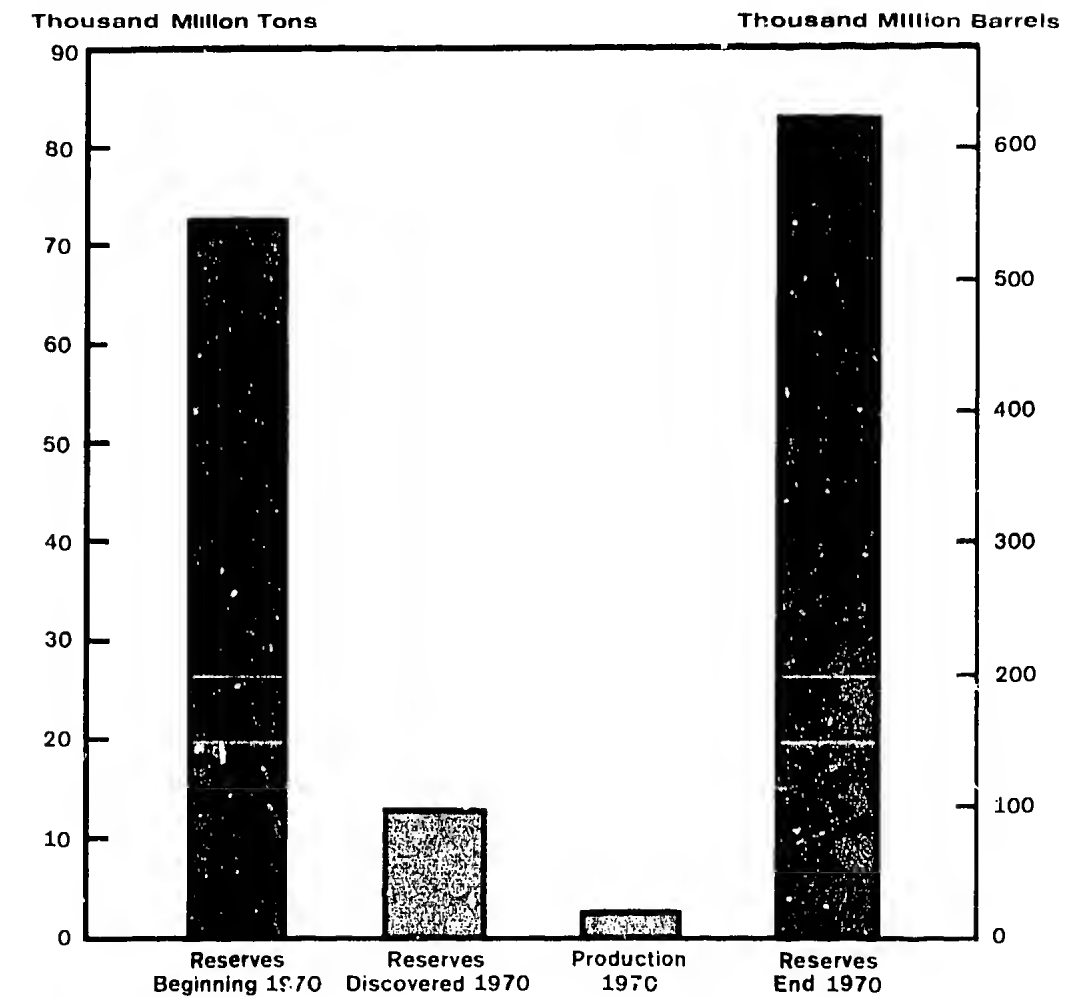
Oil reserves (billion barrels)  
Gas reserves (trillion cubic feet)

### WORLD OIL RESERVES, 1970



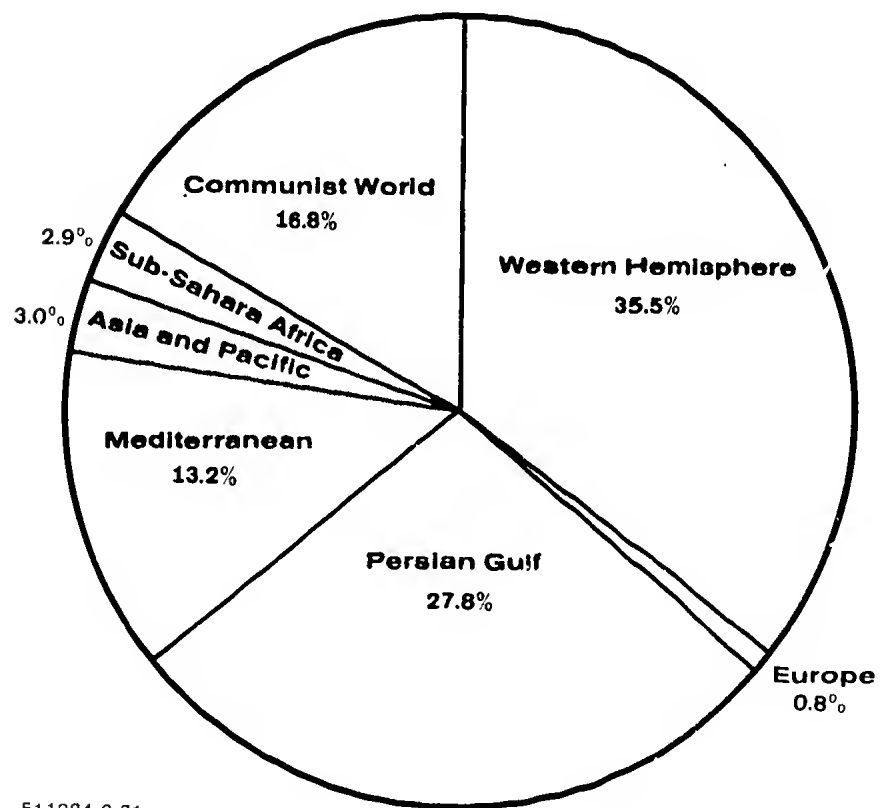
511988 9-71

## WORLD OIL RESERVES AND PRODUCTION



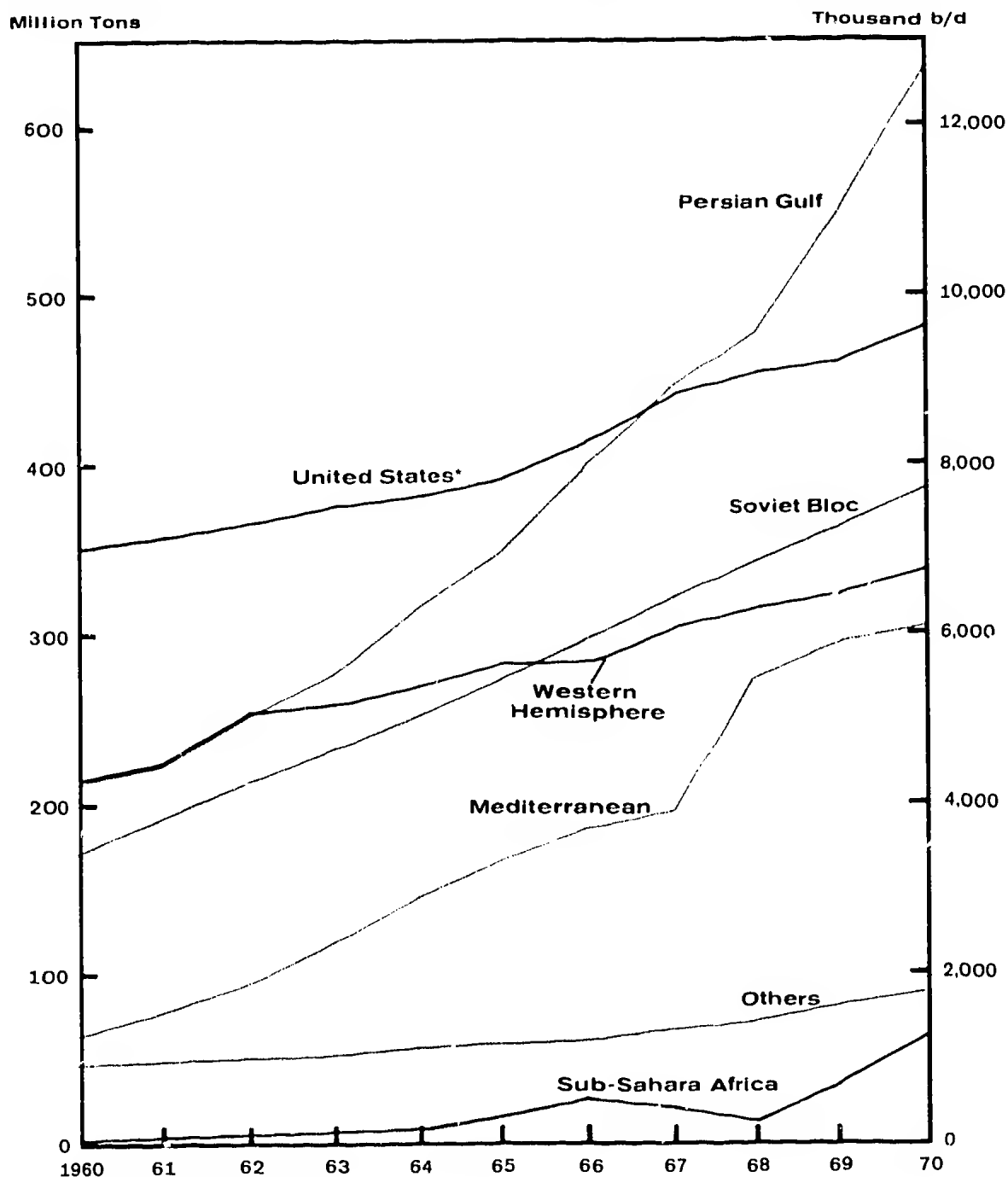
511987 9-71

### WORLD CRUDE OIL PRODUCTION, 1970



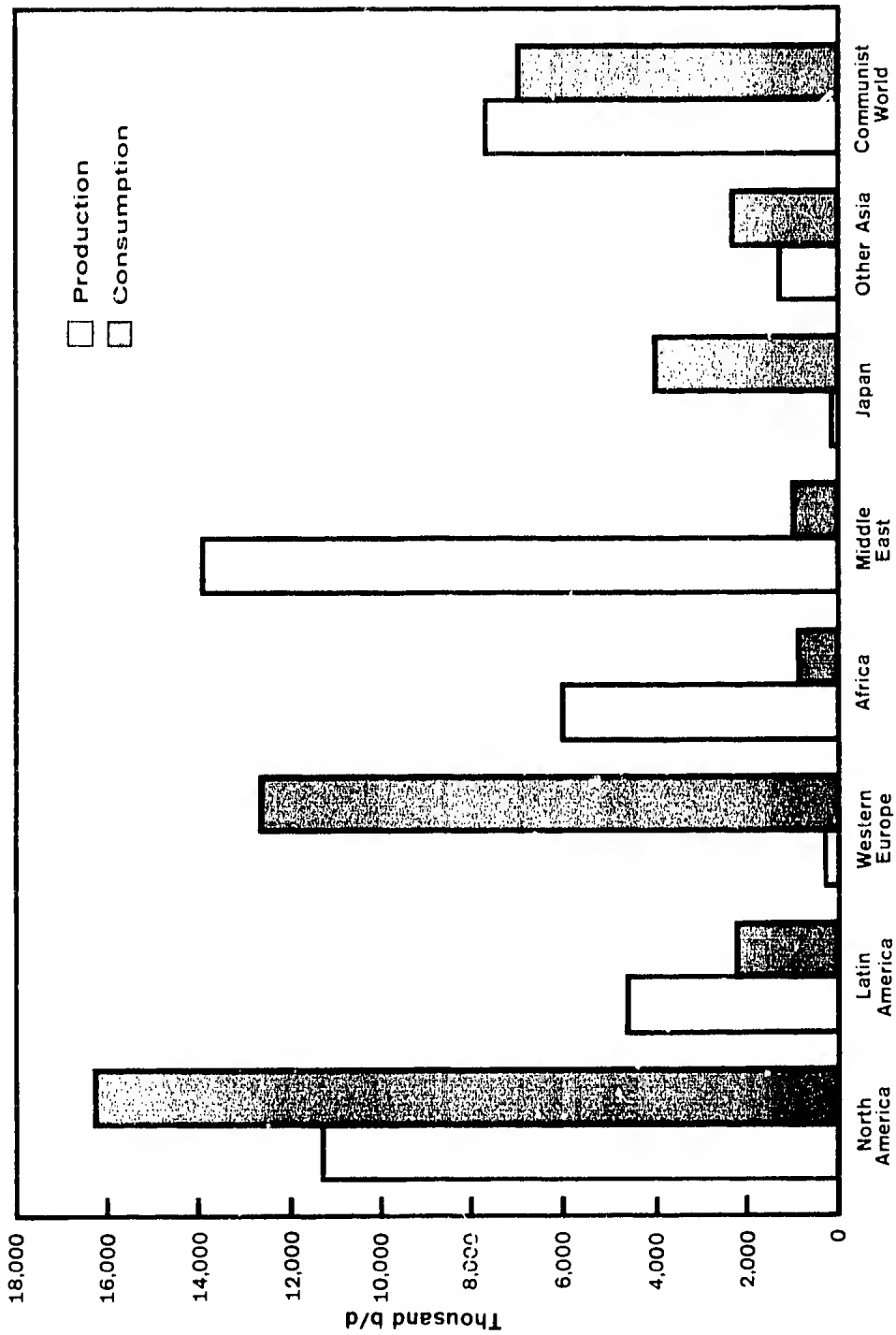
511094 9-71

## GROWTH IN WORLD CRUDE OIL PRODUCTION BY MAIN AREAS



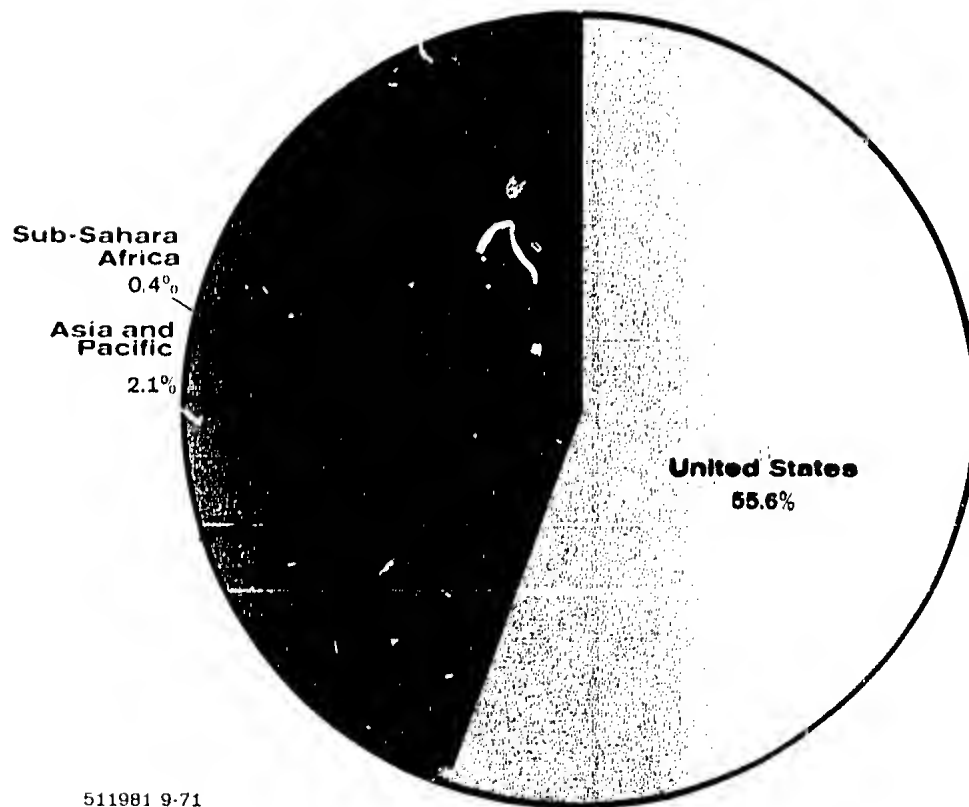
511985 9:71

# WORLD PETROLEUM PRODUCTION AND CONSUMPTION, 1970



51-986 9-71

## WORLD GAS PRODUCTION, 1970



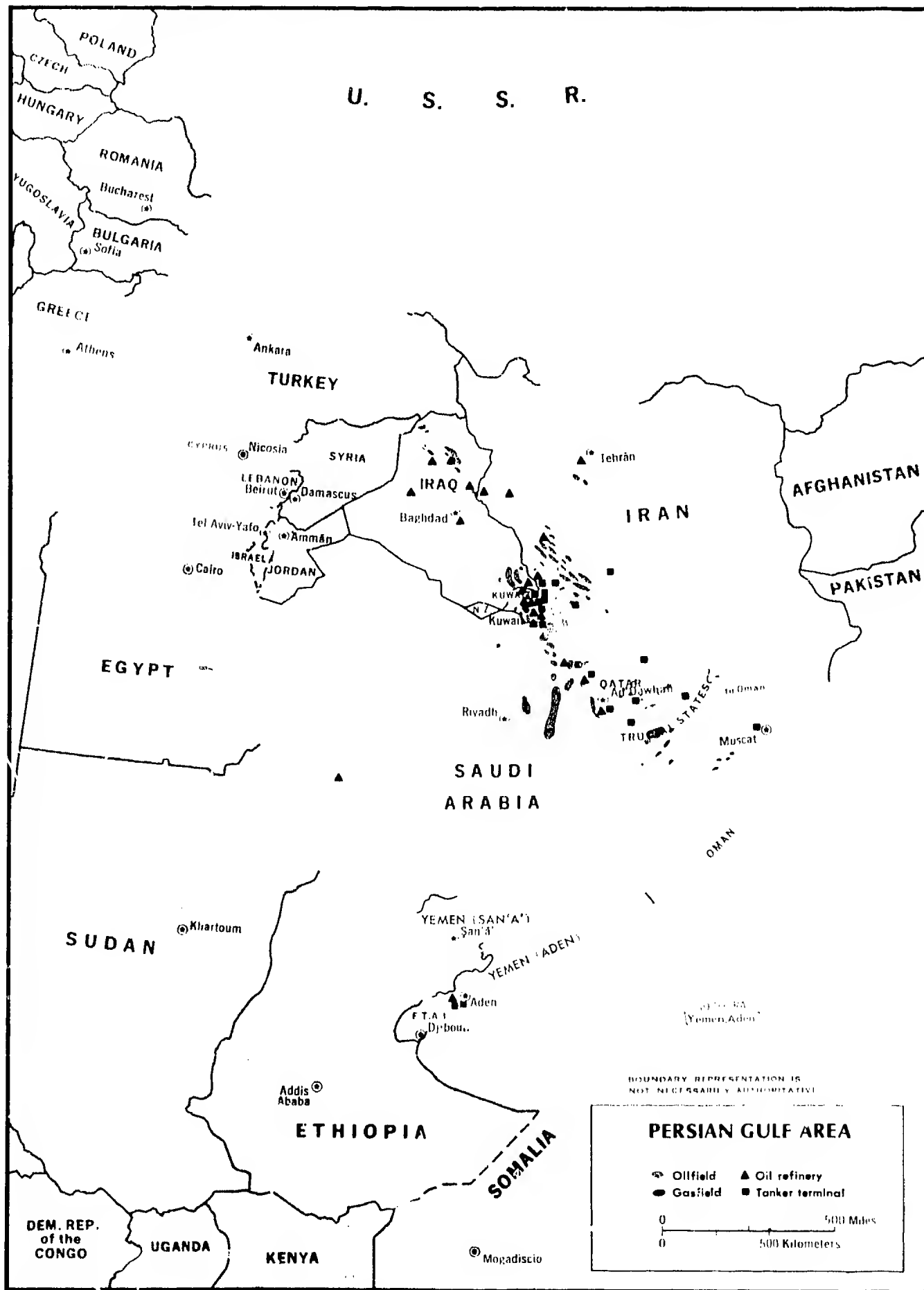
511981 9-71

PERSIAN

GULF

AREA

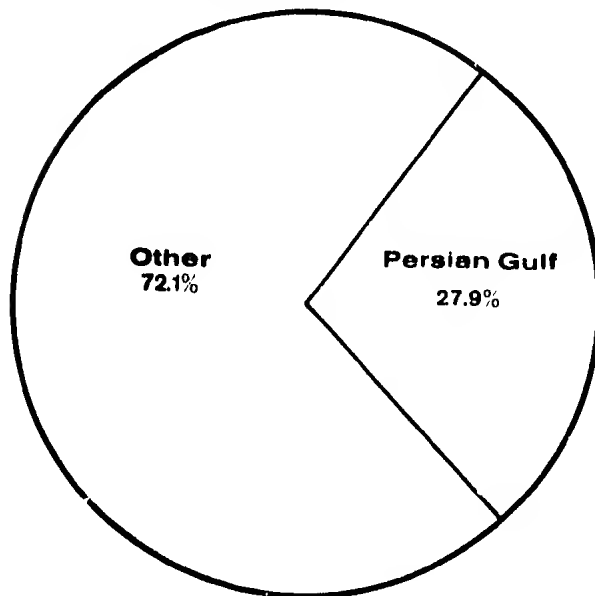




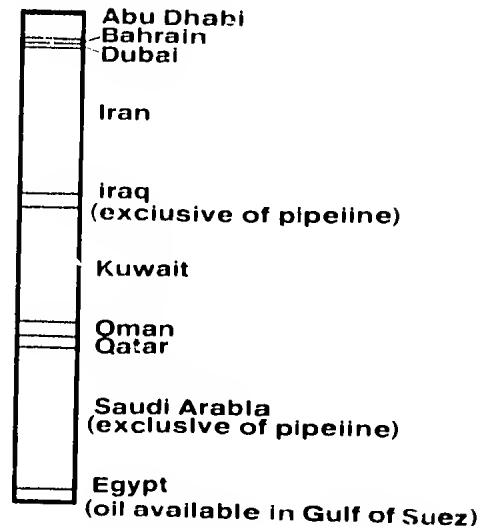
511956 9-71

# PERSIAN GULF AREA OIL SUMMARY, 1970

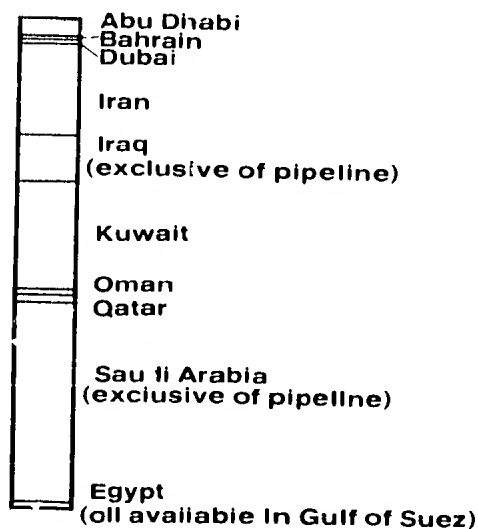
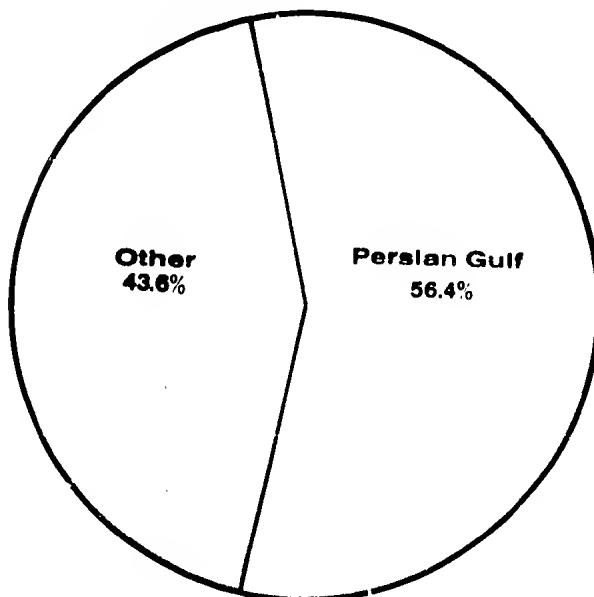
## WORLD PRODUCTION



### Percent



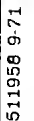
## WORLD RESERVES



511978 9-71

## Summary of Gas and Oil Production for the Persian Gulf Area

	Oil Production (Thousand b/d)			Natural Gas (Billion Cu. Ft.)		
	1969	1970	1st Qtr 1971	1969	1970	1st Qtr 1971
Abu Dhabi.....	600	694	868	.....	.....	.....
Bahrain.....	76	77	76	33.4	42.2	5.1
Dubai.....	12	86	114	.....	.....	.....
Iran.....	3,475	3,829	4,370	700.1	641.5	279.0
Iraq (exclusive of Mediterranean pipeline).....	349	366	527	46.7	28.1	6.2
Kuwait.....	2,802	2,984	3,208	5.5	11.3	N.A.
Oman.....	327	334	311	.....	.....	.....
Qatar.....	355	362	421	15.0	15.0	0.3
Saudi Arabia (exclusive of Tap- line).....	3,219	3,622	3,983	N.A.	N.A.	N.A.
Egypt (oil available in Gulf of Suez).....	215	300	288	.....	.....	.....
Total.....	11,330	12,654	14,166	800.7	738.1	290.6



## ABU DHABI

## I. Introduction

Abu Dhabi, one of seven Trucial States, has a large oil industry. Output from onshore and offshore fields has increased rapidly in recent years and reached an estimated 694,000 b/d in 1970. The major producers are the onshore fields at Murban and Bu Hasa operated by the Abu Dhabi Petroleum Company (ADPC). The principal offshore producer, Abu Dhabi Marine Areas (ADMA), operates three fields. Recently, two Japanese groups signed new concession agreements for offshore exploration; one of the companies, Abu Dhabi Oil Company—Japan, discovered a commercial deposit and expects to begin production by 1973.

## II. Statistics on Operation

## A. Crude petroleum:

## 1. Production (thousand barrels per day):

1966	1967	1968	1969	1970
362	384	498	600	694

Percent of world total: 1.5% (1970)

## 2. Reserves:

12 billion barrels (1970)

Percent of world total: 1.9%

## 3. Refinery capacity:

None

## B. Natural gas:

## 1. Production:

None

## 2. Reserves:

10 trillion cubic feet (1969)

## C. Employment in petroleum sector:

N.A.

## III. Financial Data

## A. Oil revenues (million US\$):

1966	1967	1968	1969	1970
(est) 58.0	(est) 110.9	155	186	241

Percent of total government revenues: 97%

## B. Local expenditures of foreign oil companies:

N.A.

## IV. Trade

## A. Exports:

## 1. Crude petroleum (million tons):

1960	1965	1970
0	13.5	33.4

## 2. Refined products (thousand barrels):

1967	1968	1969	1970
0	0	0	0

## B. Imports:

## 1. Crude petroleum (million tons):

1967	1968	1969	1970
0	0	0	0

2. *Refined products (thousand barrels):*

Product	1967	1968
Gasoline.....	220	135
Kerosine and jet fuel.....	25	183
Distillate fuel oil.....	250	216
Residual fuel oil.....	10	190
Lubricants.....	0	21
Other.....	0	10

*Total.....* 505 755

C. *Domestic consumption including bunkering (thousand barrels):*

1967	1968
505	755

V. **Oil and Gas Fields and Related Installations**A. *Oilfields:*

Field	Concessionaire	Date discovered	Cumulative production (thousand barrels)
Bu Hasa.....	ADPC.....	1960	551, 240 (1 Jan 1970)
Murban.....	ADPC.....	1960	
Zakum.....	ADMA.....	1964	250, 000 (1969)
Umm Shuif.....	ADMA.....	1958	225, 100 (1 Jan 1970)

B. *Gasfields:*

None

C. *Number of producing wells:*

	1967	1968	1969	1970
Oil.....	60	93	90 (1 Jul)	62
Gas.....	0	0	0	0

D. *Pipelines:*

	Ownership	Diameter (inches)	Length (miles)
Umm Shaif/Das Island.....	ADMA.....	18	22
Zakum/Das Island.....	ADMA.....	26	56
Murban field/Jebel Dhanna.....	ADPC.....	24	70
Bu Hasa spurline.....	ADPC.....	24	22
Bu Hasa/Jebel Dhanna (loopline).....	ADPC.....	24	41

VI. **Companies**A. *Producing and operating:*

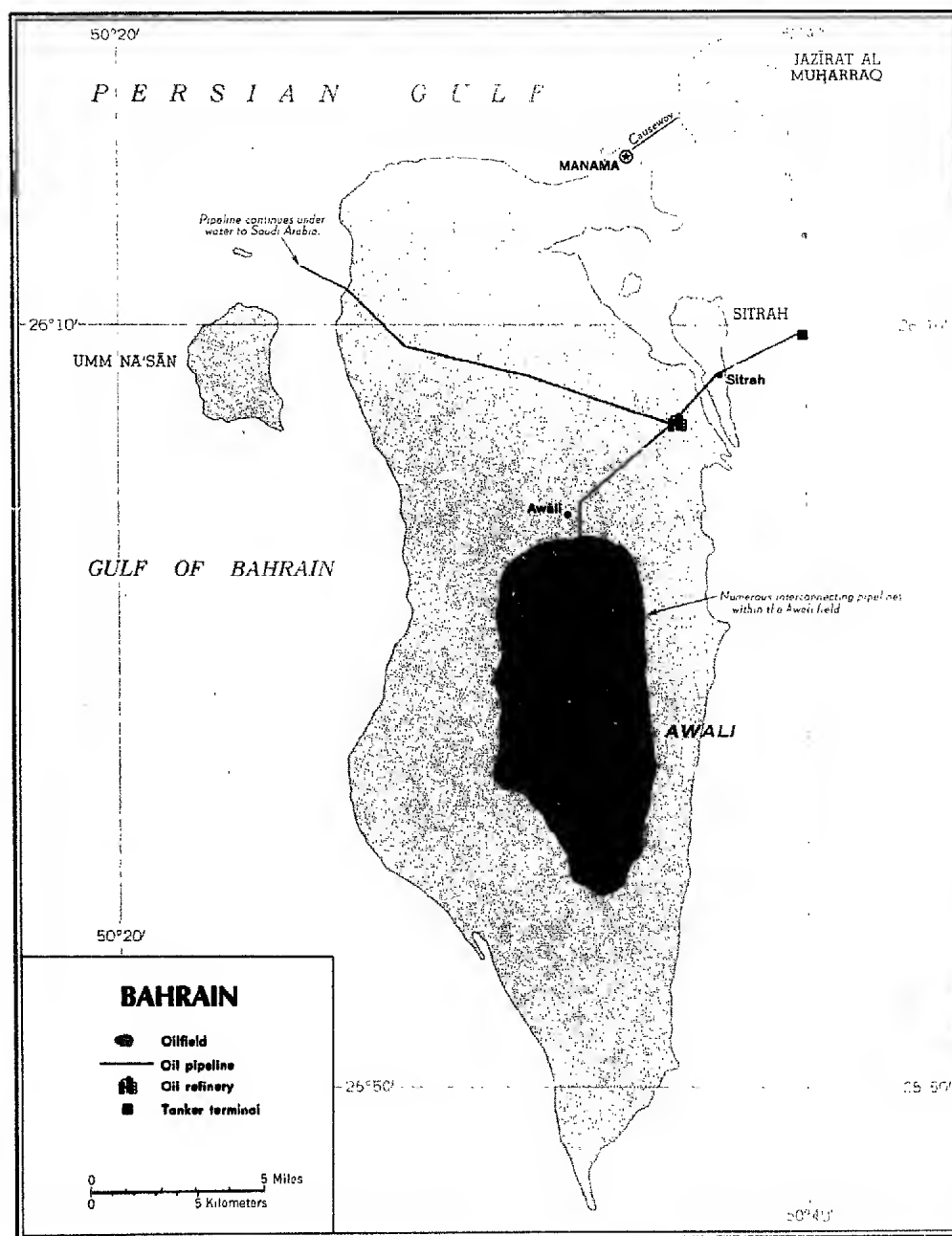
Abu Dhabi Marine Areas (ADMA)  
 Abu Dhabi Petroleum Co. (ADPC)  
 Phillips Petroleum Co.  
 Mitsubishi Oil Co., Ltd.  
 Maruzen — Daikyo — Nippon Mining

B. *Refining:*

None

C. *Pipeline:*

ADMA  
 ADPC



## BAHRAIN

## I. Introduction

Oil exploration began in 1928 and production started in 1932 in a concession held by the Bahrain Petroleum Company (BAPCO). By 1965 a total of 224 wells had been drilled onshore and 180 of them were producing.

Concessions to other offshore areas were relinquished by BAPCO and awarded to Continental Oil Co. in 1965. Continental, in turn, gave up the concessions in mid-1968. At present, little exploration is under way in Bahrain's territory, and production has increased only slightly in recent years. Oil income is derived both from the onshore fields and from the offshore Abu Sa'fah field, which is jointly shared by Saudi Arabia and Bahrain. Bahrain has one refinery (owned by BAPCO) with a capacity of 205,000 barrels per stream day which refines some Saudi Arabian crude oil as well as BAPCO oil.

## II. Statistics on Operation

A. *Crude petroleum (excluding Abu Sa'fah field):*1. *Production (thousand barrels per day):*

1967	1968	1969	1970
70.0	75.3	76.0	76.6

Percent of world total: 0.17% (1970)

2. *Reserves:*

634 million barrels (1970)

Percent of world total: 0.1%

3. *Refinery capacity (thousand barrels per stream day):*

215 (1970)

B. *Natural gas:*1. *Production:*

42.2 million cubic feet (1970)

2. *Reserves:*

5 trillion cubic feet

C. *Employment in petroleum sector:*

N.A.

## III. Financial Data

A. *Oil revenues:*

\$35.3 million (1969—including refinery operations and the ARAMCO-operated Abu Sa'fah field)

Percent of total government revenues: 80% (est.)

B. *Total expenditures of foreign oil companies:*

N.A.

## IV. Trade

A. *Exports:*1. *Crude petroleum (thousand barrels):*

1968	1969	1970
0	0	0



2. *Refined products (thousand barrels):*

Product	1966	1967
Gasoline.....	16, 577	12, 538
Kerosine and jet fuel.....	15, 505	17, 333
Distillate fuel oil.....	12, 562	13, 165
Residual fuel oil.....	29, 559	28, 971
Lubricants.....	2	3
Other.....	665	1, 662
<i>Total.....</i>	<i>74, 870</i>	<i>73, 672</i>

3. *Natural gas:*

1967	1968
------	------

N.A.	N.A.
------	------

B. *Imports:*1. *Crude petroleum (thousand barrels):*

1967	1968
------	------

52, 648	55, 881
---------	---------

2. *Refined products (thousand barrels):*

Product	1967	1968
Gasoline.....	1, 441	1, 057
Kerosine and jet fuel.....	212	157
Distillate fuel oil.....	0	50
Residual fuel oil.....	103	16
Lubricants.....	10	11
Other.....	7	4
<i>Total.....</i>	<i>1, 773</i>	<i>1, 295</i>

3. *Natural gas:*

1967	1968
------	------

N.A.	N.A.
------	------

C. *Domestic consumption including bunkering (thousand barrels):*

1967	1968
------	------

13, 629	11, 615
---------	---------

V. *Oil and Gas Fields and Related Installations*A. *Oilfields:*

Name	Concessionaire	Date discovered	Cumulative production through 1969 (barrels)
Awaii.....	BAPCO.....	1932	438, 000, 000

B. *Gasfields:*

N.A.
------

C. *Number of producing wells:*

1. Oil—213 (1969)
-------------------

2. Gas—N.A.
-------------

D. *Pipelines:*

From	To	Ownership	Size	Length	Capacity
Awali field..	Sitrah refinery terminal (offshore).	BAPCO....	Unknown..	Unknown..	Unknown
Refinery....	Saudi Arabia (underwater).	ARAMCO..	Unknown..	Unknown..	Unknown

E. *Refineries:*

Location	Owner	Capacity (thousand barrels per stream day)
On Awali-Sitrah pipeline.....	BAPCO.....	215

VI. **Companies**

A. *Producing and operating:*

BAPCO

ARAMCO (Abu Sa'fa'h field)

B. *Refining:*

BAPCO

C. *Pipeline:*

BAPCO

ARAMCO



## DUBAI

## I. Introduction

Dubai is a recent and, as yet, small producer of oil. Discovery of commercially exploitable oil was made at the offshore Fateh field in 1966, and the first well began producing in September 1969. Dubai's oil output and proved reserves are substantially less than those of Abu Dhabi, the other oil-producing Trucial State. The offshore oil concessions are held by Dubai Marine Areas, Ltd.—a group of oil companies headed by Continental Oil Company.

## II. Statistics on Operation

A. *Crude oil:*1. *Production (thousand barrels per day):*

1968	1969	1970
None	12*	86

Percent of world total: 0.19%

2. *Reserves:*

1 billion barrels (1970)

Percent of world total: 0.16%

3. *Refining:*

None

B. *Natural gas:*1. *Production:*

None

2. *Reserves:*

750 billion cubic feet (1970)

C. *Employment in petroleum sector.*

N.A.

## III. Financial Data

A. *Government oil revenues:*

1970

\$28 million

Percent of total government revenue: N.A.

## IV. Trade

A. *Exports:*1. *Crude oil (million barrels):*

1969

31

2. *Refined products:*

None

3. *Natural gas:*

N.A.

\*Dubai began production in September 1969; 12,000 b/d (est.) based on a yearly average for 1969.

B. *Imports:*

1. *Crude petroleum:*  
None
2. *Refined products:*  
N.A.
3. *Natural gas:*  
None

C. *Domestic consumption:*  
N.A.

V. Oil and Gas Fields and Related Installations

A. *Oilfields:*

Name	Concessionaire	Date discovered	Cumulative production through 1970 (barrels)
Fateh . . . . .	Dubai Marine Areas, Ltd. . . . .	1967	38, 617, 000

B. *Gasfields:*

None

C. *Pipelines:*

N.A.

D. *Refineries:*

None

VI. Companies

A. *Producing and operating:*

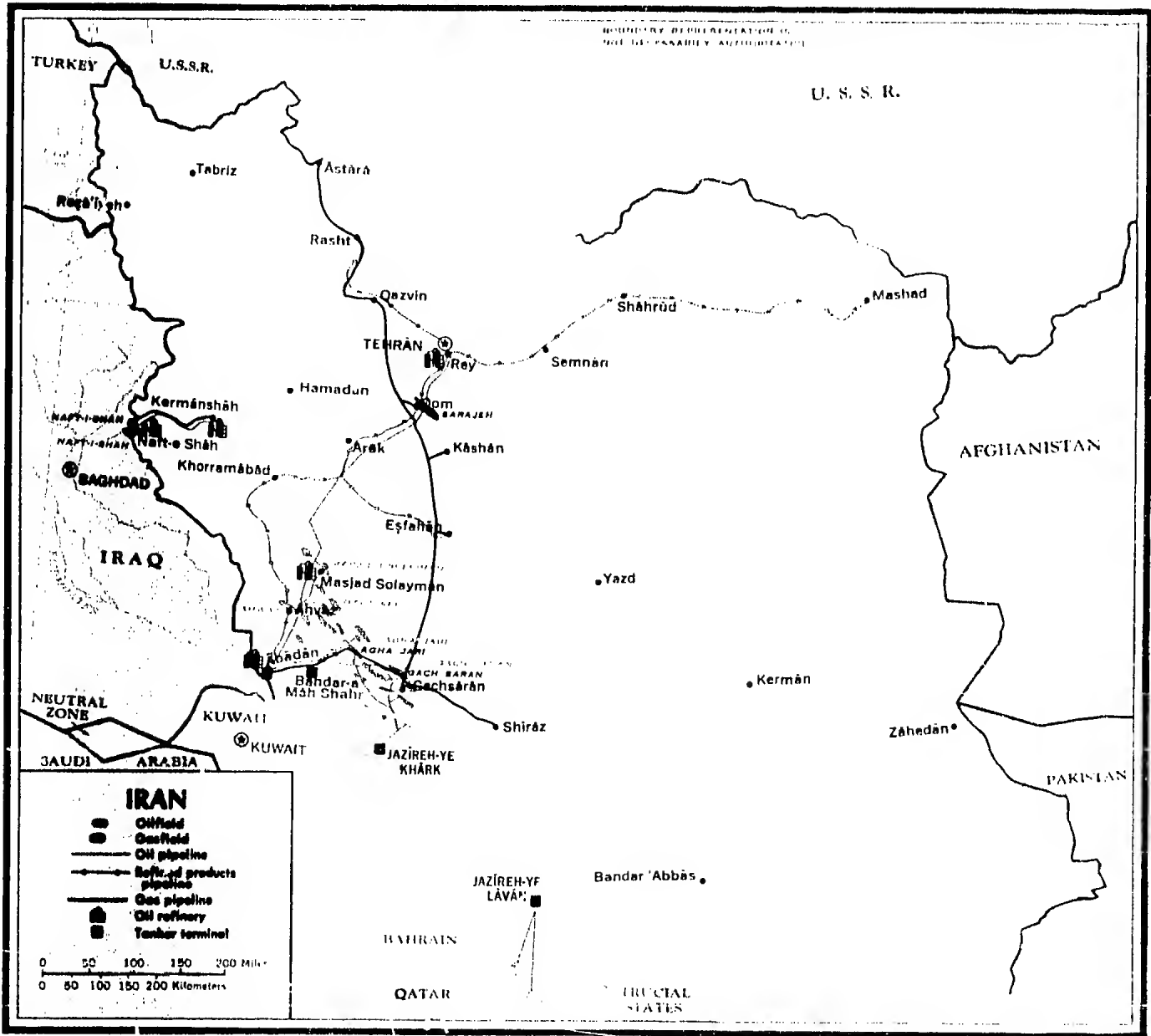
Dubai Petroleum Company  
Dubai Marine Areas, Ltd.

B. *Refining:*

None

C. *Pipeline:*

None



511965 9-71

## IRAN

**I. Introduction**

Oil was found in 1908 at Masjid-i-Suleiman by a combination of British interests that eventually became the Anglo-Iranian Oil Company. Production had reached a level of 6.5 million tons annually in 1933 when the Iranian government rescinded the company's exclusive nationwide oil rights, limiting it to a 100,000 square mile area. Production was curtailed during World War II but soared thereafter.

In 1951 the Iranian government nationalized the oil industry. Negotiations with the Anglo-Iranian Company were unsuccessful and its operations were suspended. In 1954, Iran concluded a new agreement with a consortium of foreign companies, including British Petroleum, the successor of Anglo-Iranian. The Consortium was granted exclusive oil rights in an area of southern Iran designated as the agreement area. The National Iranian Oil Company (NIOC) was recognized as the owner of fixed assets in the agreement area and the Consortium was granted exclusive use.

Since the creation of the Consortium, other petroleum companies have been granted concessions, primarily under joint ventures with NIOC. A 1957 agreement with the Italian State Oil Monopoly, Ente Nazionale Idrocarburi, gave Iran 75% of any profits, thus breaching the usual 50/50 profit split formula that had previously prevailed. The resulting company, SIREP, began producing in an offshore field. Similar terms govern agreements with a subsidiary of Standard Oil of Indiana, Lavan Petroleum, Iranian Marine International Oil, and a number of other companies and groups not yet producing. NIOC also operates several small fields on its own.

**II. Statistics on Operation****A. Crude petroleum:****1. Production (thousand barrels per day):**

1966	1967	1968	1969	1970
2,113	2,596	2,841	3,375	3,829

Percent of world total: 8.4% (1970).

**2. Reserves:**

70 billion barrels (1970).

Percent of world total: 11.3% (1970).

**3. Refining capacity (thousand barrels per stream day):**

644.8 (1 Jan 1970)

**B. Natural gas:****1. Production (billion cubic feet):**

1969	1970
700.1	641.5

**2. Reserves:**

100 trillion cubic feet (1969).

**C. Employment in petroleum sector:**

41,750 (majority working for the Consortium).

**III. Financial Data****A. Government oil revenues:**

\$1,200 million (FY1970/71).

Percent of total government revenues: 50%.

**B. Local expenditures of foreign oil companies:**

\$150 million est. (FY1970/71).

**IV. Trade****A. Exports:****1. Crude petroleum (million barrels):**

1960	1965	1970
356.2	644.1	1,158.5

**2. Refined products (thousand barrels):**

	1967	1968
Gasoline.....	18,200	15,546
Kerosine and jet fuel.....	12,000	15,701
Distillate fuel oil.....	8,604	9,834
Residual fuel oil.....	34,142	27,070
Other.....	3,300	9,305
<i>Total</i> .....	<i>76,246</i>	<i>77,456</i>

**B. Imports:****1. Crude petroleum (thousand barrels):**

1967	1968
0	0

**2. Refined products (thousand barrels):**

	1967	1968
Lubricants.....	40	47
Other.....	19	22
<i>Total</i> .....	<i>59</i>	<i>69</i>

**C. Domestic consumption including bunkering (thousand barrels):**

1967	1968
84,849	95,300



## V. Oil and Gas Fields and Related Installations

## A. Major oilfields:

Name	Owner	Date discovered	Cumulative production (barrels)
Haft Kel.....	Consortium.....	1927	1, 587, 443, 000 (1970)
Gach Saran.....	Consortium.....	1928	1, 898, 502, 000 (1970)
Agha Jari.....	Consortium.....	1938	4, 189, 220, 000 (1970)
Ahwaz.....	Consortium.....	1958	490, 360, 000 (1970)
Masjid-i-Suleiman.....	Consortium.....	1968	1, 066, 497, 000 (1970)
Bahrgan Sar.....	SIRIP.....	1960	53, 445, 662 (1969)
Cyrus.....	Pan American.....	1962	8, 137, 358 (1969)
Darius.....	Pan American.....	1961	140, 160, 000 (1969)
Rostam.....	INIMOCO.....	1966	N.A.
Sassan.....	LAPCO.....	1966	48, 600, 000 (1969)
Naft-i-Shah.....	NIOC.....	1923	205, 116, 000 (1970)
Alborz.....	NIOC.....	1956	5, 115, 892 (1969)
Sarajeh.....	NIOC.....	1958	N.A.

## B. Gasfields:

Agha Jari  
Gach Saran  
Khargiran  
Naft-i-Shah  
Pazanan  
Sarajeh

## C. Number of producing wells:

1. Oil—214 (1970)
2. Gas—N.A.

## D. Pipelines:

Crude oil:

	Ownership	Diameter (inches)	Length (miles)
Agha Jari/Ganaweh.....	Consortium....	106	42
Ganaweh/Kharg Island.....	Consortium....	25	42
Gach Saran/Kharg Island (twin line).....	Consortium....	63	26/28
Gach Saran/Kharg Island (4 lines).....	Consortium....	27	30 subm.
Gach Saran/Abadan.....	Consortium....	161	2
Agha Jari/Abadan.....	Consortium....	100	12/16
Central Area/Abadan.....	Consortium....	133	10/12
Bahrgan Sar field (offshore)/Bahrgan.....	SIRIP (ENI)..	35	16
Sassan field (offshore)/Lavan Island.....	LAPCO.....	88	22
Ahwaz/Tehran.....	NIOC.....	72	20

*Products (NIOC):*

From	To	Size (inches)	Length (miles)	Capacity
Abadan.....	Ahwaz.....	12	80	N.A.
Abadan.....	Ahwaz.....	6	75	N.A.
Ahwaz.....	Rey.....	10	513	N.A.
Azua.....	Isfahan.....	6	146	N.A.
Rey.....	Meshed.....	8	511	N.A.
Rey.....	Kazvin.....	8	93	N.A.
Kazvin.....	Rasht.....	6	110	N.A.
Teheran.....	Kazvin.....	10	42	N.A.
Teheran.....	Shahrud <sup>1</sup> .....	8	233	N.A.
Shahrud.....	Meshed.....	8	275	N.A.

*Gas:*

From	To	Size (inches)	Length (miles)	Capacity
Agha Jari.....	Abadan.....	12	110	N.A.
Gach Saran.....	Shiraz.....	10	160	N.A.
Agha Jari, Faris, Kharanj, Murum.	Savoh, Isfahan, Kashan, Astara (USSR).	38-42	770	N.A.

*Pipelines:*

From	To	Size (inches)	Length (miles)	Capacity
Naft-i-Shah.....	Kermanshah.....	N.A.	N.A.	N.A.
Gach Saran.....	Astara.....	N.A.	N.A.	N.A.

*E. Refineries:*

Location	Ownership	Capacity (thousand barrels per stream day)
Abadan.....	Iranian Oil Refining Co.....	460
Masjid-i-Suleiman.....	Iranian Oil Exploration and Refining Co.	75
Kermanshah.....	National Iranian Oil Co (NIOC).....	4.5
Naft-i-Shah.....	NIOC.....	5.3
Teheran.....	NIOC.....	100

**VI. Companies**

**A. *Producing and operating:***

NIOC--IOEPC

IORC

IPAC

SIRIP

Pan American Oil Co.

IROPCO

Consortium (Iran and BP, Shell, Gulf, Mobil, Standard of California, Standard of New Jersey, Compaigne Francaise de Pétrole, and IRICON).

LAPCO

INIMICO

DOPCO

FPC

IROPCO

PEGUPCO

ERAP

CONOCO

AREPI

**B. *Refining:***

Iranian Oil Refining Co.

Iranian Oil Exploration and Refining Co.

NIOC

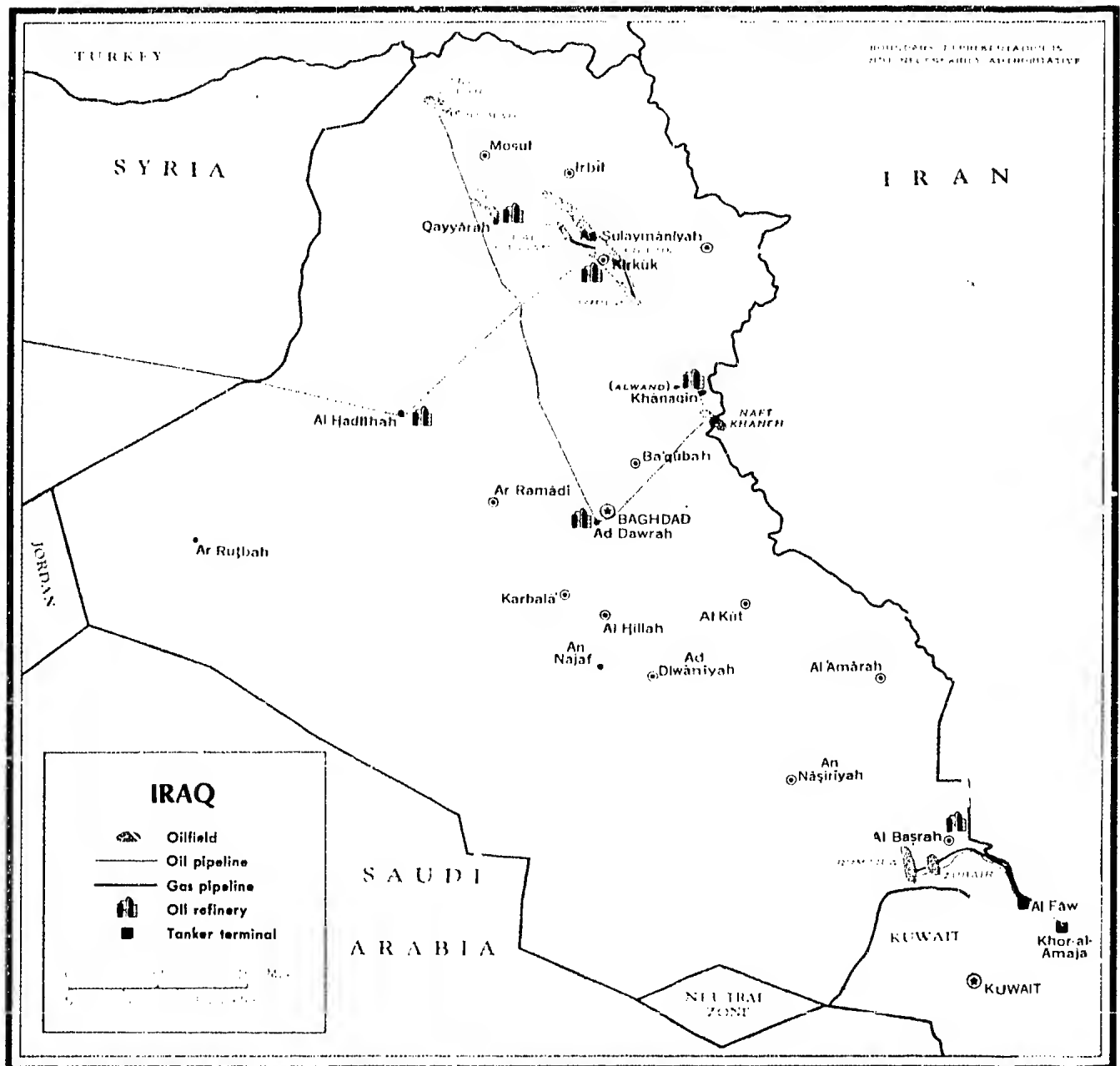
**C. *Pipeline:***

NIOC

Consortium

IPAC

SIRIP



511963 9-71

## IRAQ

**I. Introduction**

Major oil activity in Iraq began in 1927 with the discovery of the Kirkuk field by the firm now known as Iraq Petroleum Company (IPC). Other discoveries were made by Mosul Petroleum Company and Basrah Petroleum Company, both IPC affiliates. In 1964 the Iraqi government unilaterally canceled the concessions of IPC and its affiliates in all areas not then producing, reducing their territory to about 0.5% of the original size. The North Rumaila field, which had been proven by IPC but was not operating, has been the subject of negotiations between IPC and the government since that time.

The government created a state-owned petroleum company, Iraq National Oil Company (INOC), in 1964 and in 1969 concluded a \$72 million agreement with the Soviet Union for technical assistance in developing oil resources in the southern regions of the country. Petroleum is Iraq's major export, and in 1969 the petroleum sector accounted for one-third of GNP and 60% of total government revenues.

**II. Statistics on Operation****A. Crude oil:****1. Production (thousand barrels per day):**

1966	1967	1968	1969	1970
1,383.0	1,222.0	1,505.9	1,52.63	1,566.2

Percent of world total: 3.4%.

**2. Reserves:**

32 billion barrels (1970).

Percent of world total: 5.2% (1970).

**3. Refining capacity (thousand barrels per stream day):**

82.9 (1970)

**B. Natural gas:****1. Production (billion cubic feet):**

1969	1970
46.7	28.1

**2. Reserves:**

19 trillion cubic feet (1970).

**C. Employment in petroleum sector:**

IPC.....	3,350
Iraqis.....	3,243
Foreigners.....	107
Mosul.....	897
Iraqis.....	897
Basrah.....	12,411
Iraqis.....	6,810
Lebanese.....	772
Syrians.....	4,829

**III. Financial Data****A. Oil revenues (including IPC pipeline):**

\$500 million est. (1970).

Percent of total government revenues: 60%.

**B. Local expenditures of foreign oil companies:**

\$49.6 million (1969).

**IV. Trade****A. Exports:****1. Crude petroleum (thousand barrels):**

1967	1968	1969
424, 105	524, 800	529, 200

**V. Oil and Gas Fields and Related Installations****A. Oilfields:**

Name	Concessionaire	Date discovered	Cumulative production through 1969 (barrels)
Ain Zalah.....	MPC.....	1939	124, 290, 200
Bai Hassan.....	IPC.....	1953	147, 407, 200
Butmah.....	MPC.....	1952	26, 243, 400
Jambur.....	IPC.....	1954	50, 120, 000
Kirkuk.....	IPC.....	1927	4, 632, 372, 200
Naft Khaneh*.....	INOC.....	1923	72, 347, 000
Rumaila.....	Basrah Petroleum Co.....	1953	1, 040, 633, 200
Zubair.....	Basrah Petroleum Co.....	1948	498, 270, 500

**B. Gasfields:***N.A.***C. Number of producing wells:****1. Oil—1,036 (1970)****2. Gas—N.A.****D. Pipelines:***Oil:*

	Ownership	Diameter (inches)	Length (miles)
Rumaila fields/Fao (1).....	BPC.....	24	65
(2).....	BPC.....	30	32
(3).....	BPC.....	32	33
(4).....	BPC.....	16	75
Fao/Khor Al Amaya (offshore).....	BPC.....	32	28
Naft Kraneh/Baghdad.....	INOC.....	12	80
Kirkuk/Tripoli (Lebanon).....	IPC.....	12	532
Kirkuk/Tripoli (Lebanon).....	IPC.....	30/32	532
T.4 P.S./Tripoli (Lebanon).....	IPC.....	16	111
Kirkuk/Banias (Syria).....	IPC.....	30/32	555
Jambur field/Kirkuk.....	IPC.....	6/8	36
Bai Hassan field/Kirkuk.....	IPC.....	20	16
Butmah and Ain Zalah fields/K.2 P.S.....	MPC.....	12	134
K.2 P.S./Baghdad.....	MPC.....	12	110

\*Government-operated field, data estimated.

*Gas:*

From	To	Owner	Size (inches)	Length (miles)	Capacity (cubic feet per day)
Jambur.....	Kirkuk.....	IPC.....	6-8	36	N.A.
Bai Hassan.....	Kirkuk.....	IPC.....	16	20	N.A.
Rumaila.....	Basrah Powerplant.	INOC.....	.....	80	N.A.
Rumaila/Zubair.	Al Faw.....	Basrah.....	.....	65	N.A.
Rumaila.....	Basrah Powerplant.	N.A.....	N.A.	37	N.A.

*E. Refineries:*

Location	Owner	Capacity (barrels per stream day)
Ad Dawrah.....	Government Oil Refining Administration....	55, 000
Alwand Khanaqin.....	Government Oil Refining Administration....	12, 500
Basrah.....	Government Oil Refining Administration....	4, 300
Qayyarah.....	Government Oil Refining Administration....	2, 300
Al Hadithah.....	IPC.....	6, 500
Kirkuk.....	IPC.....	2, 300

**VI. Companies***A. Producing and refining:*

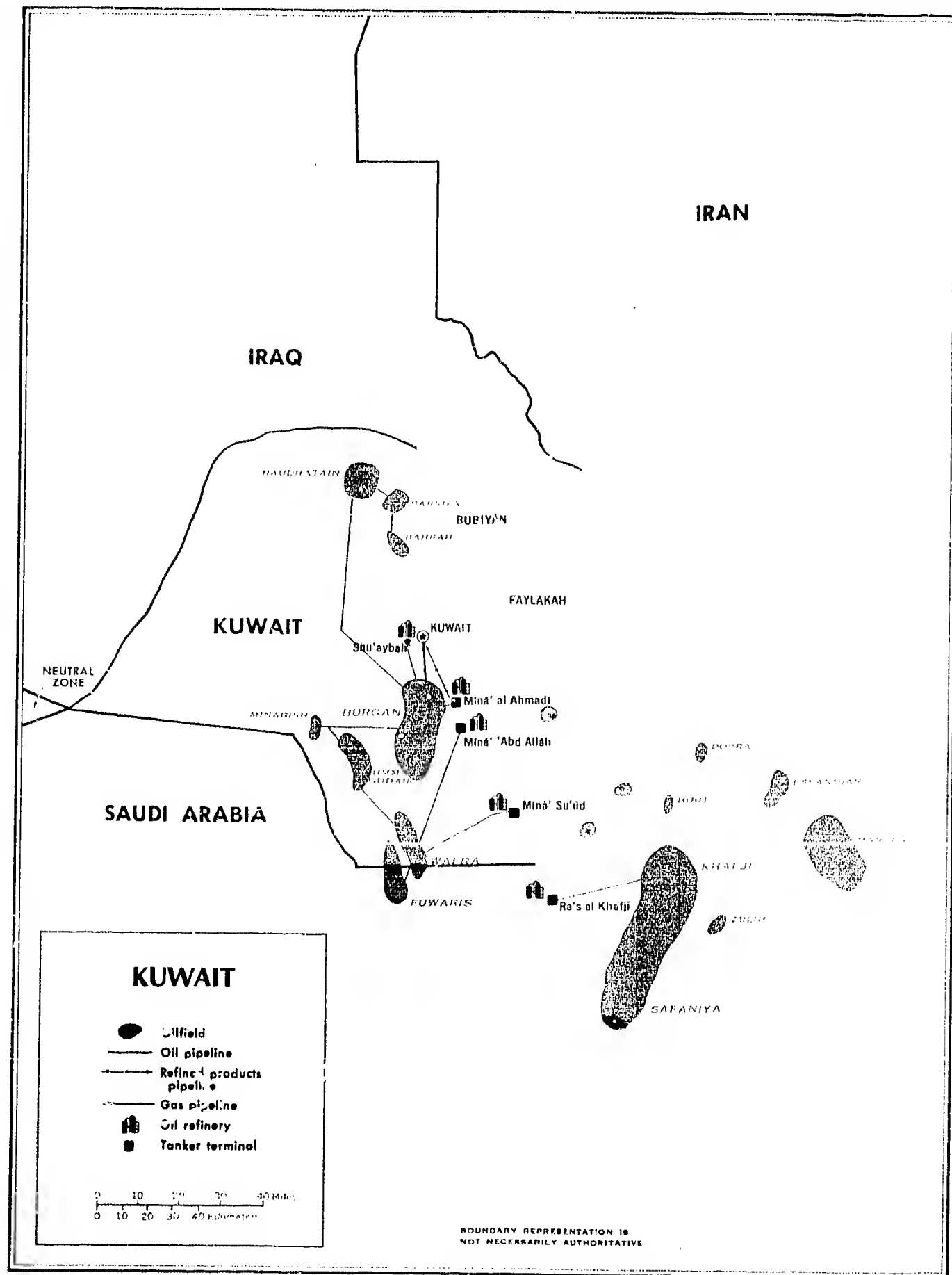
IPC  
MPC  
BPC  
INOC

*B. Refining:*

GORA  
IPC

*C. Pipeline:*

IPC  
BPC (Basrah)  
MPC (Mosul)



511052 9-71



## KUWAIT

**I. Introduction**

Kuwait ranks seventh in world output of petroleum, accounting for about 6.2% of total world production in 1970. Production in recent years has increased at about 5% to 5½% yearly—slower than some other Middle East producers—and amounted to some 3 million b/d in 1970.

The Kuwait Oil Company (KOC), the country's biggest producer, has been operating in Kuwait since 1933. In 1962, KOC ceded half of its concessions to the state-owned Kuwait National Petroleum Company (KNOC) which is still in the exploratory, non-production stages.

The country has several large oilfields, including that at Burgan which is considered to be among the world's largest. In addition to large oil reserves, Kuwait has considerable amounts of natural gas, a large refining capability, and well-developed port and bunkering facilities. The recently completed terminal at Mina al Ahmadi will accommodate large tankers (326,000 DWT) and will help Kuwait to offset the difficulty created by closure of the Suez Canal. Most of Kuwait's petroleum is exported to the EEC countries (about 40% in 1968) with the United Kingdom and Japan importing the largest single bulk.

**II. Statistics on Operation****A. Crude petroleum:****1. Production (thousand barrels per day):**

1969	1970
2,802	2,984
Percent of world total: 6.2% (1970)	

**2. Reserves:**

78 billion barrels (1970)  
Percent of world total: 12.5%

**3. Refining capacity (thousand barrels per stream day):**

489.0 (1969)

**B. Natural gas:****1. Production (billion cubic feet):**

1969	1970
5.5	11.3

**2. Reserves:**

38 trillion cubic feet (1970)

**C. Employment in petroleum sector (1970):**

KOC 36% Kuwaiti nationals

KNPC 11% Kuwaiti nationals

Kuwait-Spanish Oil Co. (Hispanoil) 35% Kuwaiti nationals

**III. Financial Data****A. Government oil revenues (million US\$):**

666.9—FY 1969/70 (including Neutral Zone)

Percent of total government revenue: 92%

**B. Local expenditures of foreign oil companies:**

N.A.

**IV. Trade****A. Exports:****1. Crude petroleum (thousand barrels):**

1967	1968	1969	1970
755,208	792,421	835,400	879,462

2. *Refined products (thousand barrels):*

Product	1967	1968	1969	1970
Gasoline.....	399	1,422	4,232	7,354
Kerosine and jet fuel.....	48	1,118	3,157	4,562
Distillate fuel oil.....	16,912	36,024	36,255	40,340
Residual fuel oil.....	34,482	23,212	29,110	38,716
Other.....	16,361	6,341	5,969	3,581
<i>Total.....</i>	<i>68,202</i>	<i>68,117</i>	<i>78,723</i>	<i>94,553</i>

3. *Natural gas:*

None (excess not consumed locally is flared).

B. *Imports:*1. *Crude petroleum (thousand barrels):*

1967	1968	1969
22,138	16,274	12,940

2. *Refined products (thousand barrels):*

Product	1967	1968	1969
Gasoline.....	13	16	16
Kerosine and jet fuel.....	0	62	6
Distillate fuel oil.....	0	107	0
Residual fuel oil.....	0	6	0
Lubricants.....	116	119	164
Other.....	66	84	20
<i>Total.....</i>	<i>195</i>	<i>394</i>	<i>206</i>

3. *Natural gas:*

None

C. *Domestic consumption excluding bunkering (thousand barrels):*

1969	1970
4,323	5,000(est.)

V. **Oil and Gas Fields and Related Installations**A. *Oilfields:*

Name	Concessionaire	Date discovered	Cumulative production through 1969 (barrels)
Burgan.....	KOC.....	1938	10,919,079,534
Magwa-al Ahmadi.....	KOC.....	1952	
Umm-Gadair.....	KOC.....	1962	
Raudhatain.....	KOC.....	1955	
Bahrah.....	KOC.....	1956	
Khashman.....	KOC.....	1963	
Minagish.....	KOC.....	1959	
Sabriya.....	KOC.....	1957	
Hout.....	KOC.....	N.A.	

**B. Gasfields:**

Same as oilfields (byproduct of oil production)

**C. Number of producing wells:**

1. Oil--739 (1970)

2. Gas--Solely a byproduct of oil production.

**D. Pipelines:**

	Concessionaire	Diameter (inches)	Length (miles)
Raudhatain field/Mina al Ahmadi.....	KOC.....	30	63
Minagish/Mina al Ahmadi.....	KOC.....	22/24/26	30
Burgan, Magwa, Ahmadi fields/Mina al Ahmadi (transit lines).	KOC.....	34/14	6 x 14-20
North and South tank farm/ Tanker berth (8 lines).	KOC.....	34/22	8 x 6
To new loading platform.....	KOC.....	48	10
<i>Neutral zone:</i>			
Wafra field/Mena Abdulla refinery and export terminal.	Aminoil.....	24	34
Umm Ghudair/Wafra.....	Aminoil.....	16	23

**E. Refineries:**

Location	Concessionaire	Capacity (barrels per stream day)
Mina Abd Allah.....	Aminoil.....	144,000
Shu'aybah.....	KNPC.....	95,000
Mina al Ahmadi.....	KOC.....	250,000

**VI. Companies****A. Producing and operating:**

Kuwait Oil Co.

Kuwait National Petroleum Co.

Hispanoil (Kuwait) (in conjunction with KNPC)

Shell (Kuwait)

**B. Refining:**

KOC

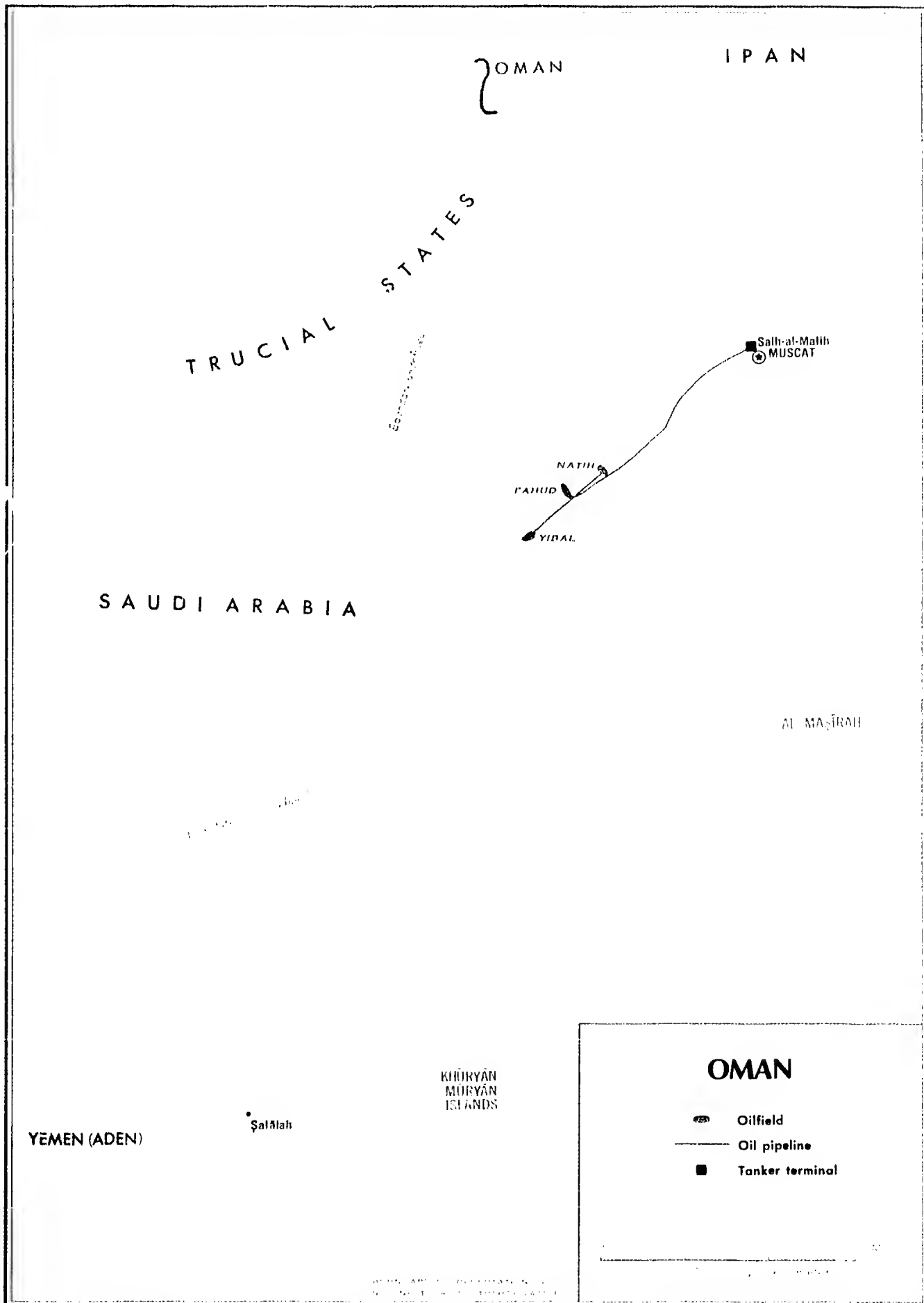
KNPC

Aminoil (American Independent Oil Co.)

**C. Pipeline:**

KOC

KNPC



## OMAN

## I. Introduction

Although petroleum exploration began in 1937, oil production did not start in Oman until 1967. Oil was discovered at the onshore sites of Natih, Fahud, and Yibal by Petroleum Development Oman (PDO) in 1964. Wintershall, A.G., holds offshore rights, but exploration has been unsuccessful to date. Petroleum facilities consist of a single crude oil pipeline running from 175 miles inland to the Gulf of Oman.

## II. Statistics on Operations

## A. Crude oil:

## 1. Production (thousand barrels per day):

1966	1967	1968	1969	1970
0	57	240	327	334

Percent of world production: 0.7% (1970).

## 2. Reserves:

1.7 billion barrels (1970).

Percent of world total: 0.3% (1970).

## 3. Refinery capacity (thousand barrels per stream day):

None

## B. Natural gas:

## 1. Production:

None

## 2. Reserves:

2 trillion cubic feet.

## C. Employment in petroleum sector:

N.A.

## III. Financial Data

## A. Oil revenues (million US\$):

1968	1969	1970
70	90	109 (est.)

Percent of total government revenues: 95%.

## B. Local expenditures of foreign oil companies:

N.A.

## IV. Trade

## A. Exports:

## 1. Crude petroleum (thousand barrels):

1967	1968	1970
22,775	96,551	121,314

## 2. Refined products:

1967	1968
None	None

## 3. Natural gas:

1967	1968
None	None

**B. Imports:****1. Crude petroleum:**

	1967	1968
None	None	None

**2. Refined products (thousand barrels):**

Product	1967	1968
Gasoline.....	253	306
Kerosine and jet fuel.....	8	202
Distillate fuel oil.....	296	125
Residual fuel oil.....	1,385	2,422
Lubricants.....	0	0
Other.....	255	190
<b>Total.....</b>	<b>2,197</b>	<b>2,245</b>

**3. Natural gas:**

	1967	1968
N.A.	N.A.	N.A.

**4. Domestic consumption including bunkering (thousand barrels):**

	1967	1968
2,197	3,245	

**V. Oil and Gas Fields and Related Installations****A. Oilfields:**

Name	Concessionaire	Date discovered	Cumulative production through 1969 (barrels)
Fahud-Wasia.....	PDO.....	1964	154,620,000
Natih.....	PDO.....	1963	68,740,000
Yibal.....	PDO.....	N.A.	Not on stream

**B. Gasfields:**

None

**C. Number of producing wells:**

1. Oil—50 (1970)

2. Gas—None

**D. Pipelines:**

	Ownership	Size (inches)	Length (miles)	Capacity (barrels per day)
Fahud, Natih, Yibal/Sailh-al-Malih.....	PDO.....	30-36-32	175	130,000

**E. Refineries:**

None

**VI. Companies****A. Producing and operating:**

PDO

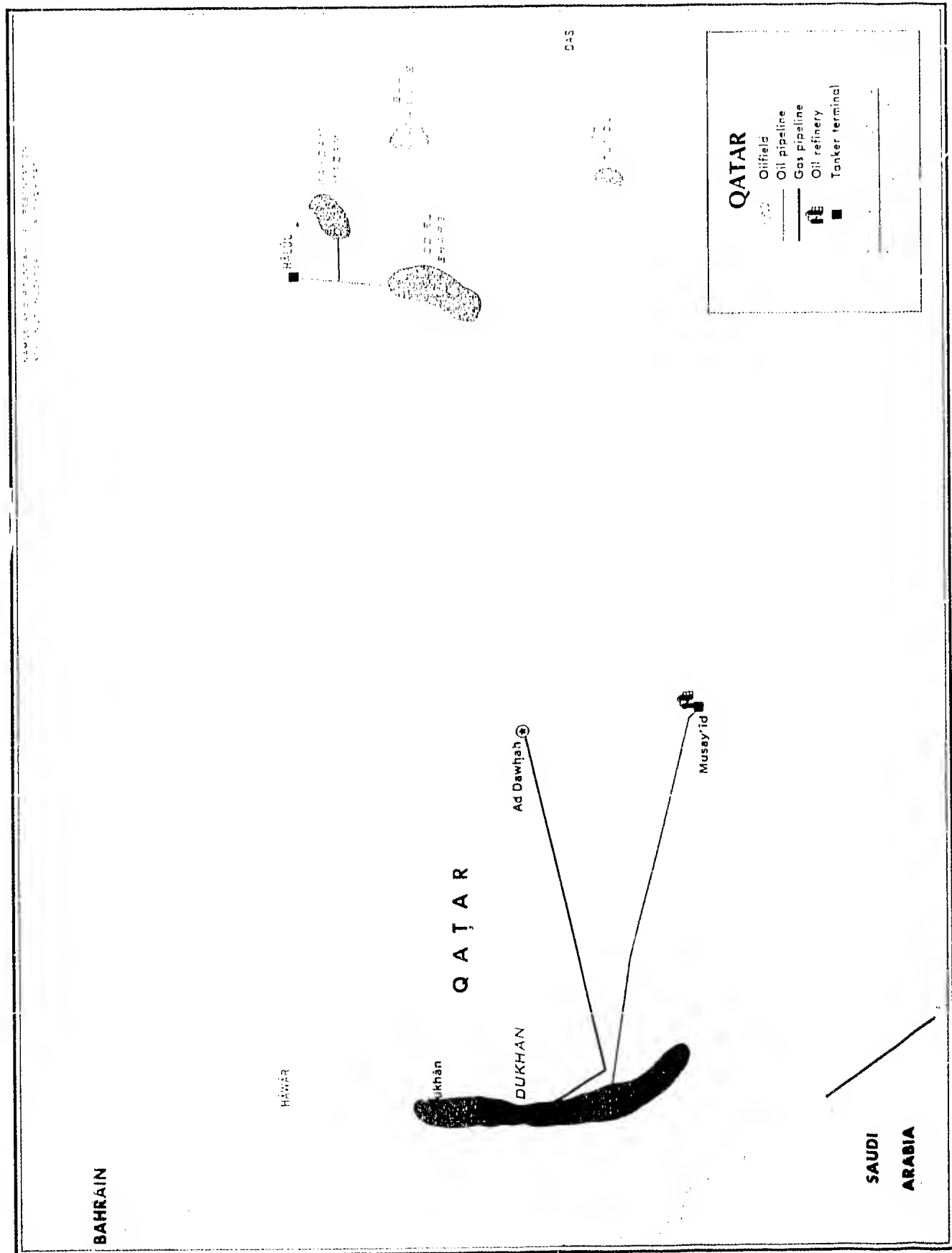
Wintershall, A.G.

**B. Refining:**

None

**C. Pipeline:**

PDO



511940 7-71

## QATAR

## I. Introduction

Oil exploration, begun by the Qatar Petroleum Company in 1940, was suspended during World War II. Exploration resumed after the war, and QPC's onshore Dukham field came onstream in 1948. Shell Oil, Qatar, successfully drilled offshore at Idd-el-Shargi in 1960 and at Maydan-Mahzan in 1963. The oil industry was relatively stagnant during the mid-1960s; in 1969, however, a new offshore concession was awarded to Qatar Japan Oil Company.

## II. Statistics on Operation

## A. Crude oil:

## 1. Production (thousand barrels per day):

1966	1967	1968	1969	1970
289	323	338	355	362

Percent of world total: 0.8% (1970).

## 2. Reserves:

4.3 billion barrels.

Percent of world total: 0.7% (1970).

## 3. Refining capacity (thousand barrels per stream day):

0.7 (1969).

## B. Natural gas:

## 1. Production (billion cubic feet):

1969	1970
15	15

## 2. Reserves:

10 trillion cubic feet.

## C. Employment in petroleum sector:

N.A.

## III. Financial Data

## A. Oil revenues (million US\$):

1969	1970
96	129

Percent of total government revenues: 91%.

## B. Local expenditures of foreign oil companies:

N.A.

## IV. Trade

## A. Exports:

## 1. Crude petroleum (thousand barrels):

1967	1968	1969	1970
116,829	124,078	129,598	136,900

## 2. Refined products:

None

## 3. Natural gas:

None

## B. Imports:

## 1. Crude petroleum:

None



2. *Refined products (thousand barrels):*

Product	1967	1968	1969
Gasoline.....	251	289	302
Kerosine and jet fuel.....	27	22	23
Distillate fuel oil.....	78	137	172
Residual fuel oil.....	0	0	0
Lubricants.....	7	10	11
Other.....	0	53	124
<i>Total.....</i>	<i>363</i>	<i>511</i>	<i>632</i>

3 *Natural gas:*

N.A.

C. *Domestic consumption including bunkering (thousand barrels):*

1967	1968
466	716

V. **Oil and Gas Fields and Related Installations**A. *Oilfields:*

Name	Concessionaire	Date discovered	Cumulative production through 1969 (barrels)
Dukhan (onshore).....	QPC.....	1940	1, 077, 240, 000
Idd-el-Shargi.....	Shell.....	1960	78, 910, 000
Maydam-Mazyam.....	Shell.....	1963	138, 470, 000

B. *Gasfields:*

N.A.

C. *Number of producing wells:*1. *Oil—68 (1970)*2. *Gas—N.A.*D. *Pipelines:*

From	To	Owner	Size (inches)	Length (miles)	Capacity
<b>Crude oil:</b>					
Umm Bab.....	Umm Said.....	Qatar Petroleum Co. Ltd. (2)	14	38	N.A.
Shargi.....	Haluli Island..	Shell.....	12	13	N.A.
Maydam-Mazyam..	Haluli Island..	Shell.....	14	10	N.A.
<b>Gas:</b>					
Dukhan.....	Doha (Ad Dawhah)	Qatar government	20	35	N.A.

**E. Refineries:**

Location	Owner	Capacity (barrels per stream day)
Umm Said . . . . .	National Oil Development Co., Qatar.	700

**VI. Companies**

**A. Producing and operating:**

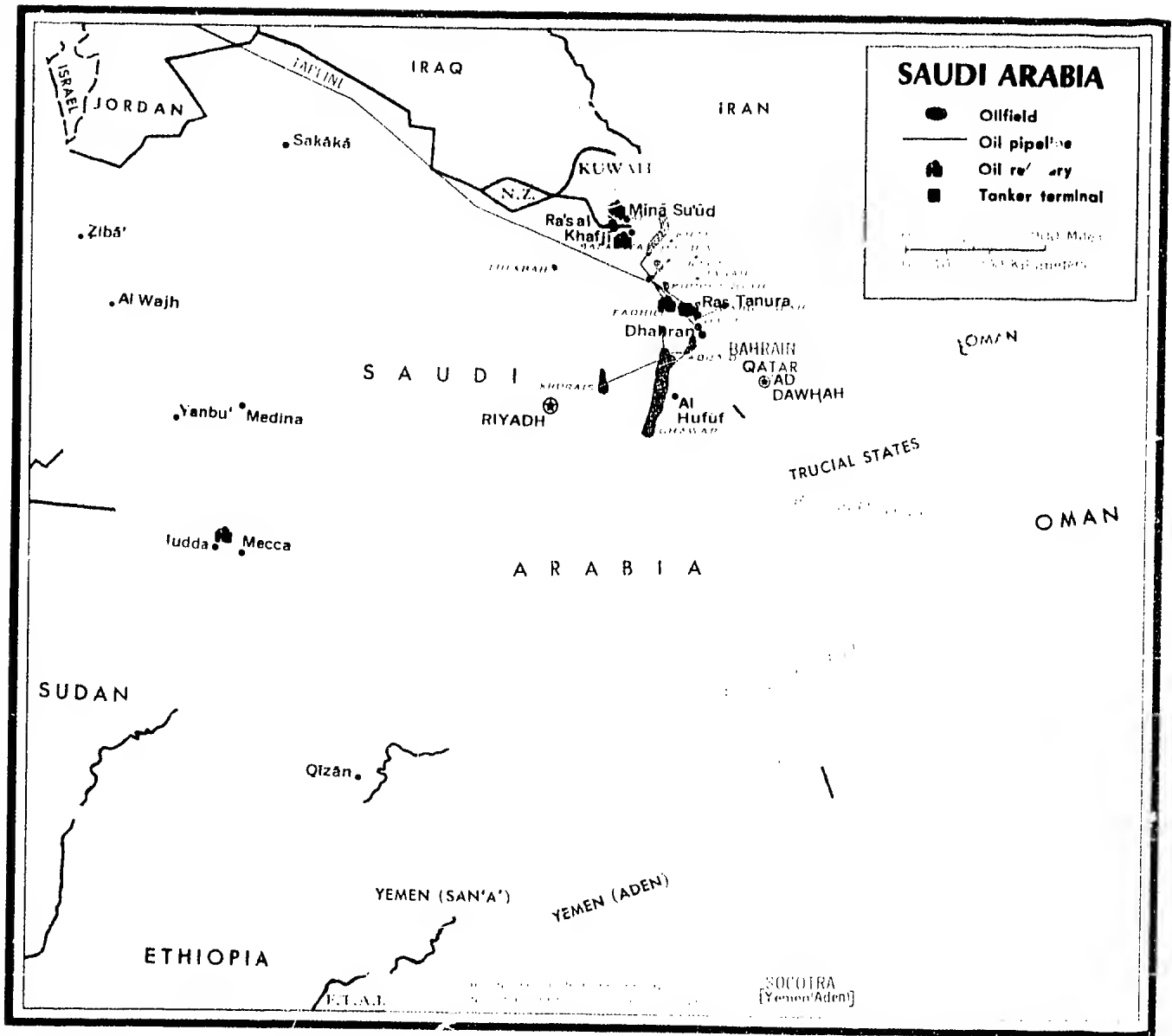
Qatar Petroleum Co., Ltd.  
Qatar Japan Oil Co.  
Shell (Qatar)

**B. Refining:**

Qatar Petroleum Co., Ltd.

**C. Pipeline:**

Qatar Petroleum Co., Ltd.  
Shell (Qatar)



511951 9-71

## SAUDI ARABIA\*

## I. Introduction

Oil was discovered in 1938 by Standard Oil of California, the first of a series of strikes. The Ghawar field (onshore) and the Safaniya field (offshore) are Saudi Arabia's most prolific areas; Safaniya is the world's largest known offshore field.

The Arabian American Oil Co. (ARAMCO--Standard Oil of Calif., 30%; Standard Oil of New Jersey, 30%; Texaco, 30%; and Mobil Oil, 10%) is the only producer operating in the country at the present time. ARAMCO also operates the Abu Sa'fah offshore field, jointly claimed by Saudi Arabia and Bahrain. Three other private companies are operating in conjunction with the state oil firm, Petromin, but they have yet to produce crude oil.

## II. Statistics on Operation

## A. Crude oil:

## 1. Production (thous. and barrels per day)\*:

1969	1970
3,219	3,622
Percent of world total: 8.9% (1970).	

## 2. Reserves:

148 billion barrels.  
Percent of world total: 23.8% (1970).

## 3. Refinery capacity (thousand barrels per stream day):

475

## B. Natural gas:

## 1. Production:

Gas oil separator plant (GOSP) at Safaniya had an initial rate of 200,000 b/d in 1969.

## 2. Reserves:

50 trillion cubic feet.

## C. Employment in petroleum sector (1970--ARAMCO only):

Saudis.....	8,630
Foreigners.....	1,726

Total..... 10,356

## III. Financial Data

## A. Oil revenues (million US\$):

1969	1970
980	1,223

Percent of total government revenue: 85%-90% (1970).

## B. Local expenditures of foreign oil companies (million US\$):

\$171 million (1970--ARAMCO only).  
10% of Saudi Arabian GNP (1967).

## IV. Trade

## A. Exports:

## 1. Crude petroleum (thousand barrels):

1967	1968	1969	1970
819,823	891,676	939,000	1,097,000

\*Excluding Neutral Zone through 1969.

2. *Refined products (thousand barrels):*

Product	1967	1968	1969	1970
Gasoline.....	16, 141	21, 179	21, 522	N.A.
Kerosine and jet fuel.....	10, 551	14, 728	15, 466	N.A.
Distillate fuel oil.....	12, 070	15, 322	13, 541	N.A.
Residual fuel oil.....	33, 048	44, 500	47, 464	N.A.
Lubricants.....	0	0	0	N.A.
Other.....	6, 406	9, 905	13, 139	N.A.
<i>Total.....</i>	<i>78, 516</i>	<i>105, 634</i>	<i>111, 132</i>	<i>192, 000</i>

3. *Natural gas:*

N.A.

B. *Imports:*1. *Crude petroleum (thousand barrels):*

1967	1968
------	------

0	0
---	---

2. *Refined products (thousand barrels):*

Product	1967	1968
Gasoline.....	3	1
Kerosine and jet fuel.....	0	5
Distillate fuel oil.....	0	118
Residual fuel oil.....	0	254
Lubricants.....	0	107
Other.....	16	2
<i>Total.....</i>	<i>19</i>	<i>487</i>

3. *Natural gas:*

N.A.

C. *Domestic consumption including bunkering (thousand barrels):*

1967	1968	1969	1970
49, 359	50, 346	N.A.	N.A.

V. *Oil and Gas Fields and Related Installations*A. *Oil fields:*

Name	Concessionaire	Date discovered	Cumulative production through 1970 (barrels)
Abqaiq.....	ARAMCO.....	1940	3, 259, 757, 565
Abu Hadriya.....	ARAMCO.....	1940	148, 169, 986
Abu Sa'fah*.....	ARAMCO.....	1963	87, 727, 831
Berri.....	ARAMCO.....	1964	36, 016, 554
Dumman.....	ARAMCO.....	1938	501, 828, 531
Fadhili.....	ARAMCO.....	1949	77, 605, 982
Ghawar.....	ARAMCO.....	1948	5, 568, 979, 621
Khurais.....	ARAMCO.....	1957	14, 580, 563
Khursaniyah.....	ARAMCO.....	1956	294, 340, 485
Manifa.....	ARAMCO.....	1957	67, 494, 253
Qatif.....	ARAMCO.....	1945	275, 299, 503
Safaniya.....	ARAMCO.....	1951	1, 613, 166, 713
Shaybah.....	ARAMCO.....	1968	9, 870
Zuluf.....	ARAMCO.....	1965	Not in production

\*Shared jointly by Bahrain.

B. *Gasfields:*

N.A.

C. *Number of producing wells:*1. *Oil*—4182. *Gas*—N.A.D. *Pipelines:*

	Ownership	Length (miles)	Diameter (inches)
Saudi Arabia:			
Qaisumah/Sidon (Lebanon).....	ARAMCO.....	754	30/31
Abqaiq/Qaisumah.....	ARAMCO.....	315	30/31
Fadhili field/Qatif-Qaisumah.....	ARAMCO.....	27.5	—
Offshore Manifa/Safaniya/Ras Tanura.....	ARAMCO.....	103	22/30/32
Khursaniyah/Ras Tanura.....	ARAMCO.....	65	42
Abu Safah field/Ras Tanura.....	ARAMCO.....	29	—
Abqaiq/Qatif.....	ARAMCO.....	29	30
Safaniya/Ras Tanura.....	ARAMCO.....	137	22
Safaniya/Khursaniyah.....	ARAMCO.....	64	—
Dahran/Bahrain.....	ARAMCO.....	34	12/14
Formerly called Idris field:			
Khafji offshore/onsnore terminal.....	AOC.....	27	20
Wafra field/Ras Al Zor terminal.....	Getty Oil Co.....	25	10/16

E. *Refineries:*

Location	Owner	Capacity (thousand barrels per stream day)
Ras Tanura.....	Aramco.....	383
Jidda.....	Petromin.....	12

VI. **Companies**A. *Producing and operating:*

ARAMCO

ENI

ERAP-ELF

Sun Oil and Natomas

General Petroleum and Mineral Organization—Petromin (state owned)

B. *Refining:*

ARAMCO

Petromin

C. *Pipelines:*

Tapline (ARAMCO)

ARAMCO

Persian Gulf Area Refineries			
Company and refinery location	Crude capacity (b/sd)	Cat-cracking capacity	Cat-reforming capacity
ADEN			
BP Refinery (Aden) Ltd., Aden.....	178,000	.....	10,000
BAHRAIN			
Bahrain Petroleum Co. Ltd., Bahrain.....	215,250	36,000	15,000
IRAN			
Iranian Oil Refining Co.			
Abadan.....	460,000	36,000	25,000
Masiid-i-Sulaiman.....	75,000	.....	.....
National Iranian Oil Co.			
Kermanshah.....	4,500	.....	.....
Naft-i-shah.....	5,300	.....	.....
Teheran.....	100,000	14,400	12,500
TOTAL.....	644,800	50,400	37,500
National Iranian Oil, Shiraz.....	45,000	(Under construction)	
IRAQ			
Government Oil Refineries Administration			
Daura.....	55,000	.....	5,000
Hadithah.....	6,500	.....	.....
Khanagin, Alwand.....	12,500	.....	.....
Muftieh Depot, Basrah.....	4,300	.....	.....
Quiyarah.....	2,300	.....	.....
Iraq Petroleum Co. Ltd., Kirkuk.....	2,300	.....	.....
TOTAL.....	82,900	.....	5,000
Government Oil Refineries Administration, Abu Fulus.....	70,000	(Planned)	
JORDAN			
Jordan Petroleum Refining Co., Zerka.....	7,400	1,400	900
KUWAIT			
American Independent Oil Co. Mina Abdulla.....	144,000	.....	.....
Kuwait National, Shy'aybah.....	95,000	.....	15,800
Kuwait Oil Co., Ltd. Mina al Ahmadi.....	250,000	.....	4,100
TOTAL.....	489,000	.....	19,900
QATAR			
National Oil Development Co., Umm Said.....	700	.....	.....
SAUDI ARABIA			
Arabian American Oil Co., Ras Tanura.....	383,250	.....	14,700
Petromin, Jiddah.....	12,000	.....	2,500
Arabian Oil Company Ltd., Dhufji.....	30,000	.....	.....
Getty Oil Co., Mina Saud.....	50,000	.....	.....
TOTAL.....	475,250	.....	17,200

## IRAQ PETROLEUM COMPANY (IPC) PIPELINES

Origin.....	Kirkuk Oilfield Station K-1 (Iraq)
Destination.....	Homs Junction, Syria
Length and diameter.....	150 miles; 2 lines—12" 2 lines—16" 2 lines—30/32" 315 miles; 1 line—12" 1 line—16" 2 lines—30/32" 29 miles; 1 line—12" 1 line—16" 1 line—24" 1 line—26" 1 line—30"
Capacity.....	494 miles
Throughput capacity:	This section has a capacity of 600,000 b/d. Total..... 1.08 million b/d IPC..... 1.07 million b/d (Banias and Tripoli terminals)
Pumping Stations.....	K-1, K-2, K-3, and T-1 in Iraq T-2, T-3, and T-4 in Syria
Origin.....	Homs Junction (Syria)
Destination.....	Banias, Syria      Tripoli, Lebanon
Length and diameter.....	62 miles, 1 line—24"      38 miles, 1 line—12" 1 line—26"      1 line—16" 1 line—30"
Capacity.....	600,000 b/d      500,000 b/d
Terminal storage.....	4.8 million barrels      2.5 million barrels

## TRANS ARABIAN PIPELINE SYSTEM

The pipeline facility for the movement of Saudi Arabian crude oil to the port city of Sidon (Lebanon) on the Eastern Mediterranean is referred to as the Trans Arabian Pipeline system. Actually, the complete system is owned and operated by the two corporations—Aramco and the Trans Arabian Pipeline Company (Tapline), which is owned by the Aramco owners in the same proportion.

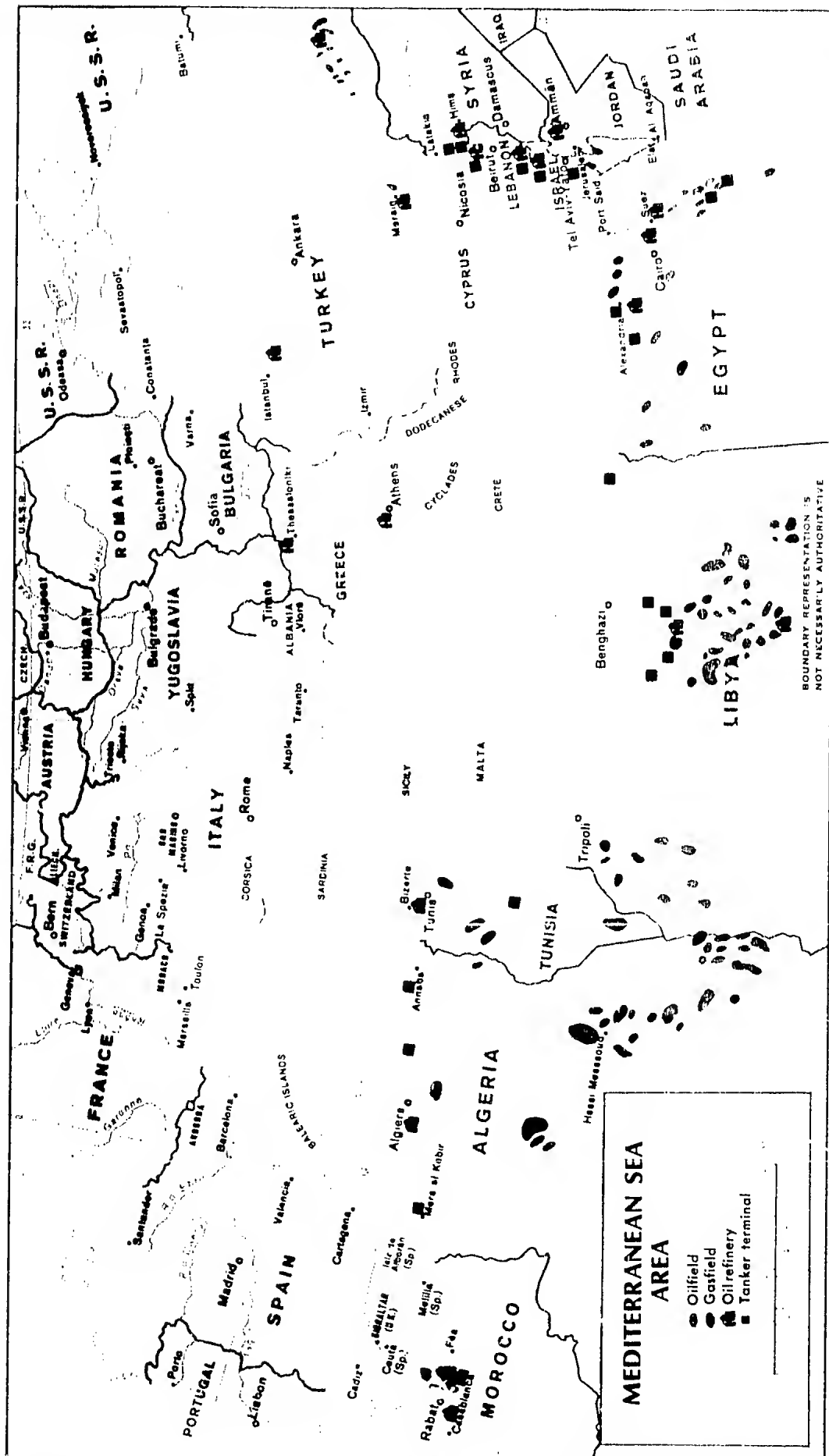
The following are the physical characteristics of the system:

	Aramco	Tapline	Total
	<i>Miles</i>		
Qatif Junction to Qaisumah.....	270	0	270
Qaisumah to Border.....	0	539	539
Jordan.....	0	110	110
Syria.....	0	79	79
Lebanon, Sidon.....	0	26	26
Total.....	270	754	1,024
Diameter (inches).....	30-31	36-31	
Capacity (bpd).....	485,000	485,000	485,000
Throughput (1970).....	177,000 b/d	Sidon terminal (Lebanon).	
Pumping stations.....	Abqaiq.....	Qaisumah	
	Tufaih*.....	Uwaiqilah*	
	Nariya.....	Badanah	
		Shubah*	
	Wariah*.....	Rafha	
		Jalamid*	
		Turaif	
		Qaryataln	
Terminal storage (Sidon).....	3 million barrels.		
Loading capacity (Sidon).....	26,000 barrels per hour.		

\*Unmanned remote control auxiliary pumping stations.



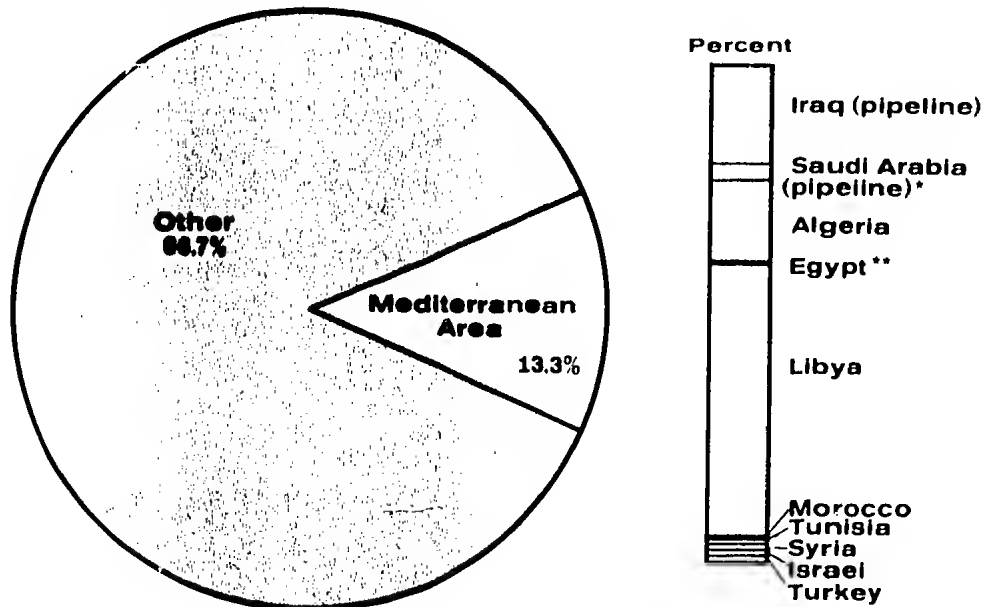
SOUTHERN  
MEDITERRANEAN SEA  
AREA



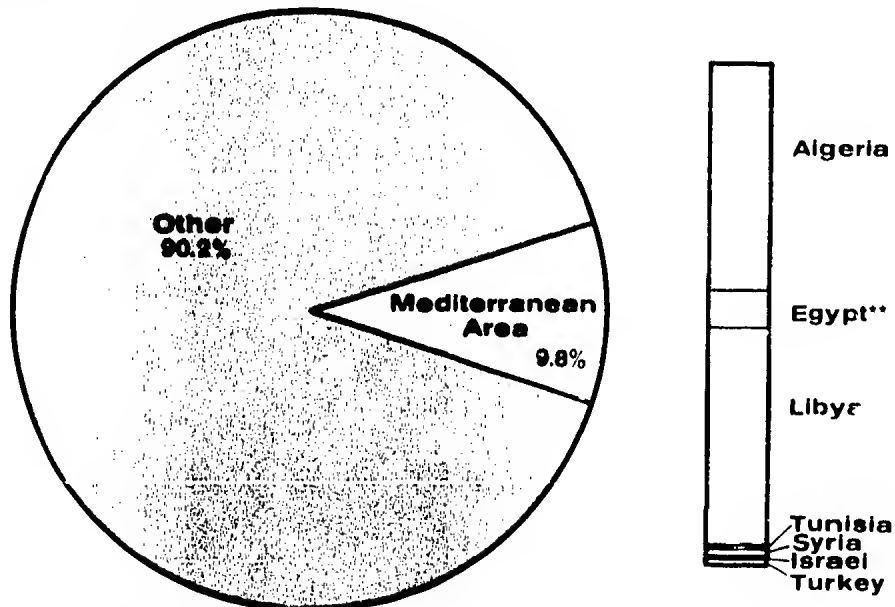
511969 9:71

# SOUTHERN MEDITERRANEAN SEA AREA OIL SUMMARY, 1970

## WORLD PRODUCTION



## WORLD RESERVES\*\*\*



\* Topline closed from May 1970 to March 1971

\*\* Excludes 300,000 b/d available in Gulf of Suez

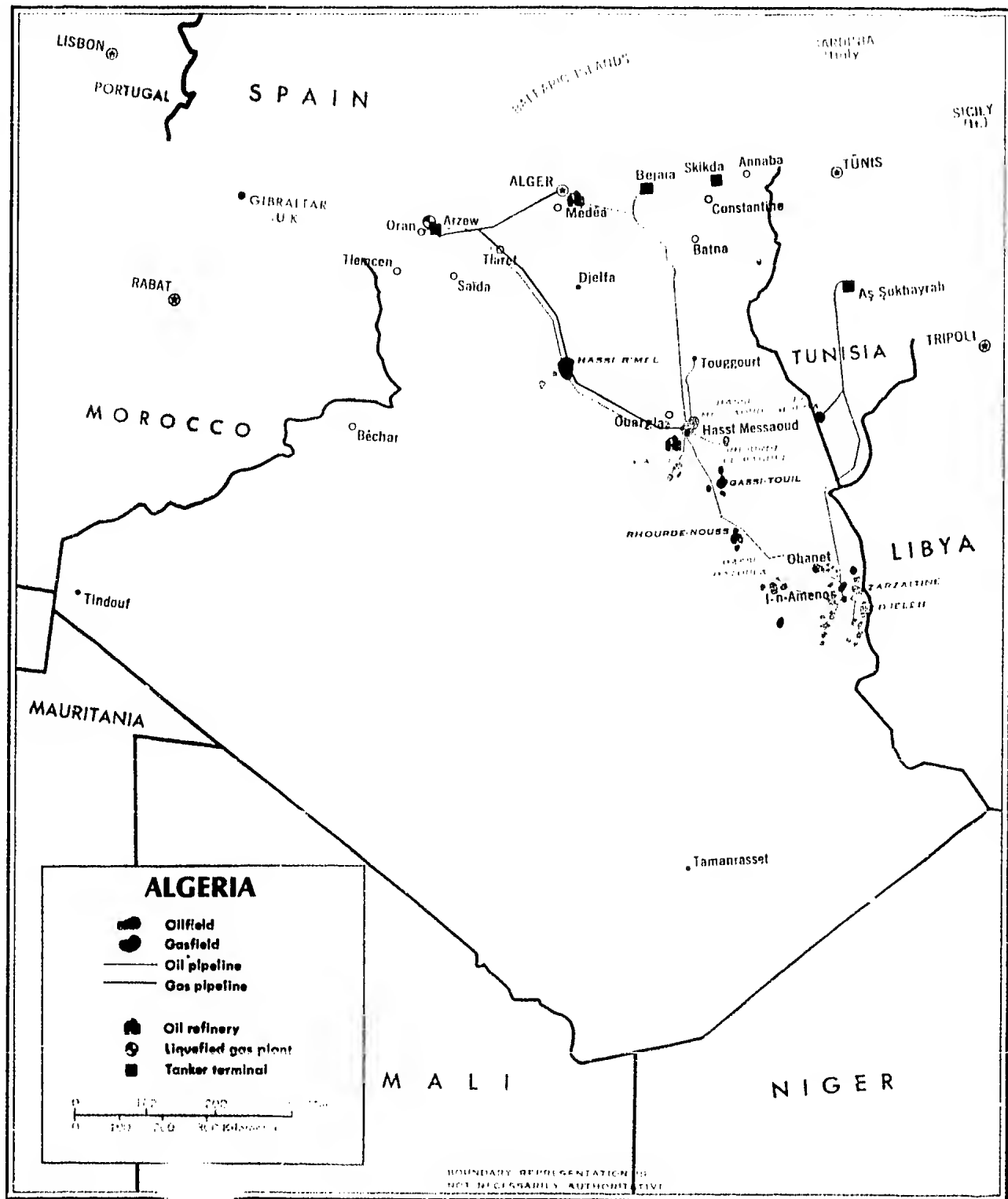
\*\*\* Reserves in Iraq and Saudi Arabia included in Persian Gulf

511979 9-71

## Summary of Gas and Oil Production for the Southern Mediterranean Sea Area

	Oil Production (Thousand b/d)			Natural Gas (Billion Cu. Ft.)		
	1969	1970	1st Qtr 1971	1969	1970	1st Qtr 1971
Iraq (IPC Pipeline).....	1,177	1,200	1,189	.....	.....	.....
Saudi Arabia (Tapline).....	345	177	480	.....	.....	.....
Algeria.....	935	988	997	105.4	99.7	29.6
Egypt*.....	30	30	30	.....	.....	.....
Libya.....	3,111	3,321	3,078	N.A.	N.A.	N.A.
Morocco.....	1	1	1	14.8	14.6	0.3
Tunisia.....	78	87	87	3.2	1.6	0.2
Syria.....	48	83	100	.....	.....	.....
Israel.....	52	70	122	5.5	4.2	0.6
Turkey.....	69	69	65	.....	.....	.....
Total.....	5,846	6,026	6,149	128.9	120.1	30.7

\*Including only oil available in the Mediterranean Sea. Total Egyptian production in 1970 was 330,000 barrels per day.



511954 9-71

## ALGERIA

**I. Introduction**

Algeria, Africa's oldest and third largest petroleum exporter, produced small quantities of crude oil early in this century; its petroleum boom, however, did not get under way until 1956 with the discovery of the Saharan fields. Algeria also has enormous, largely unexploited, reserves of natural gas.

Historically, France played a prominent role in Algeria's oil industry. French firms administered most concession areas, produced about 80% of the country's oil through 1970, and more than half of Algeria's output was marketed in France. Gas concessions, pipelines, and liquefaction plants were jointly held by French and Algerian firms. In April 1971, however, Algeria nationalized 35% of total French companies' oil producing assets, giving Algeria majority interest in each French company while allowing for continued French participation in production and marketing. At the same time, petroleum pipelines and gas concessions were totally nationalized.

Algerian oil and natural gas interests are vested in a single state company, SONATRACH. SONATRACH owns 55% of Algerian crude oil production, all pipelines and gas concessions, and nearly 70% of the existing refinery capacity. SONATRACH markets its own production abroad and handles all domestic distribution. In addition, the construction of several petrochemical complexes, a refinery, gas liquefaction plants, and petroleum pipelines comes under SONATRACH auspices.

**II. Statistics on Operation****A. Crude petroleum:****1. Production (thousand barrels per day):**

1966	1967	1968	1969	1970
703	811	902	935	988

Percent of world total: 2.2% (1970).

**2. Reserves:**

30 billion barrels (1970)

Percent of world total: 4.9% (1970).

**3. Refinery capacity (thousand barrels per stream day):**

48.3

**B. Natural gas:****1. Production (billion cubic feet):**

1969	1970
105.4	99.7

**2. Reserves:**

150 trillion cubic feet (1970)

**C. Employment in petroleum sector:**

N.A.

**III. Financial Data****A. Government oil revenues (million US\$):**

1969	1970
250	200

Percent of total government revenues: 23.4% (1969)

**IV. Trade****A. Exports:****1. Crude petroleum (million barrels):**

1967	1968	1969
282.9	285.5	324.0

**2. Refined products (thousand barrels):**

1967	1968	1969
1,837	4,411	3,760

**3. Natural gas:**

55 billion cubic feet (1970)

**B. Imports:****1. Crude petroleum (thousand barrels):**

1967	1968	1969	1970
458	0	0	0

**2. Refined products (thousand barrels):**

Product	1967	1968	1969
Gasoline.....	216	75	N.A.
Distillate fuel oil.....	80	148	N.A.
Residual fuel oil.....	156	0	N.A.
Lubricants.....	259	252	N.A.
Other.....	424	821	N.A.
<b>Total.....</b>	<b>1,135</b>	<b>1,296</b>	<b>1,540</b>

**3. Natural gas:**

N.A.

**C. Domestic consumption including bunkering (thousand barrels):**

1967	1968	1969
14,618	12,676	12,604

**V. Oil and Gas Fields and Related Installations****A. Oilfields (major):**

Of which:

Name	Concessionaire	Date discovered	Cumulative production through 1969 (barrels)
<b>North Sahara area:</b>			
Gassi Touil.....	SONATRACH. ALREX ERAP COPEFA	1963	199, 109, 943
Hassi Messaoud (N).....	SN REPAL...	1956	{ 392, 044, 530 547, 047, 216
Hassi Messaoud (S).....	CAREP.....		
Rhourde El Baguel.....	SONATRACH. ALREP VEEDOL	1962	123, 633, 397
Hassi Mazoula.....	N.A.....	N.A.	N.A.
<b>Polignac basin area:</b>			
Edjeleh.....	N.A.....	1956	112, 077, 569
Zarzaitine.....	N.A.....	1958	350, 244, 725

B. *Gasfields:*

Name	Concessionaire	Date of production
Hassi R'mel.....	SONATRACH	N.A.
Gassi Touil*.....	N.A.	N.A.
Rhourde Nouss.....	N.A.	Not producing

C. *Number of producing wells:*

1. Oil—755 (1969)
2. Gas—N.A.

D. *Pipelines:*

1. Oil:

	Ownership	Length (miles)	Diameter (inches)
Haoud el Hamra/Arzew.....	SONATRACH.....	500	28
Haoud el Hamra/Bougie.....	SONATRACH.....	411	24/22
In Amenas/La Skhirra.....	TRAPSA in dispute.	480	24
Ohanet/Haoud el Hamra.....	SONATRACH.....	322	30
El Gassi/MD 1.....	SONATRACH.....	56	10
MD 1/Haoud el Hamra.....	SONATRACH.....	16	16
MD 1/Haoud el Hamra.....	SONATRACH.....	16	20
UP 1/Haoud el Hamra.....	SONATRACH.....	8	20
Haoud el Berkaoui/PK 71.6.....	SONATRACH.....	14	8
Rhourde el Baguel/Haoud el Hamra.	SONATRACH.....	67	14
Hassi R'Mel/Haoud el Hamra.....	SONATRACH.....	183	8
PK 66/In Amenas.....	SONATRACH.....	41	10
Edjeleh/In Amenas.....	SONATRACH.....	31	12
Zarzaitine N.E./Zarzaitine.....	SONATRACH.....	7	6
Zarzaitine/In Amenas.....	SONATRACH.....	15	14
El Adeb Larache/Tiguentourine.....	SONATRACH.....	34	8
Tiguentourine/La Reculee.....	SONATRACH.....	14	12
Tin Fouye/In Amenas.....	SONATRACH.....	134	14
Ohanet/PK 66.....	SONATRACH.....	29	24
Acheb/PK 51.....	SONATRACH.....	17	6
H'Mazoula Sud/H'Mazoula.....	SONATRACH.....	13	6
Tan Emellel/Edjeleh.....	SONATRACH.....	14	6
Rhourde Nouss/PK 263.6.....	SONATRACH.....	19	8

E. *Refineries:*

Location	Ownership	Capacity (thousand barrels per day)
Hassi Messaoud.....	Cia Raffinage en Afrique du Nord (CRAN).....	3.3
Maison Carree.....	Société de la Raffinage d'Alger.....	45.0

\*Joint oil and gas production.



**VI. Companies**

**A. Producing and operating:**

CREPS

S.N. Repal

CFP

SNPA

CEP

EURAFREP

COPEFA

AMOFRANCE

ASCOP

CAREP

COPAREX

FRANCAREP

OMNIREX

PETROPAR

PREPA

SONATRACH

VEEDOL Oil Co.

**B. Refining:**

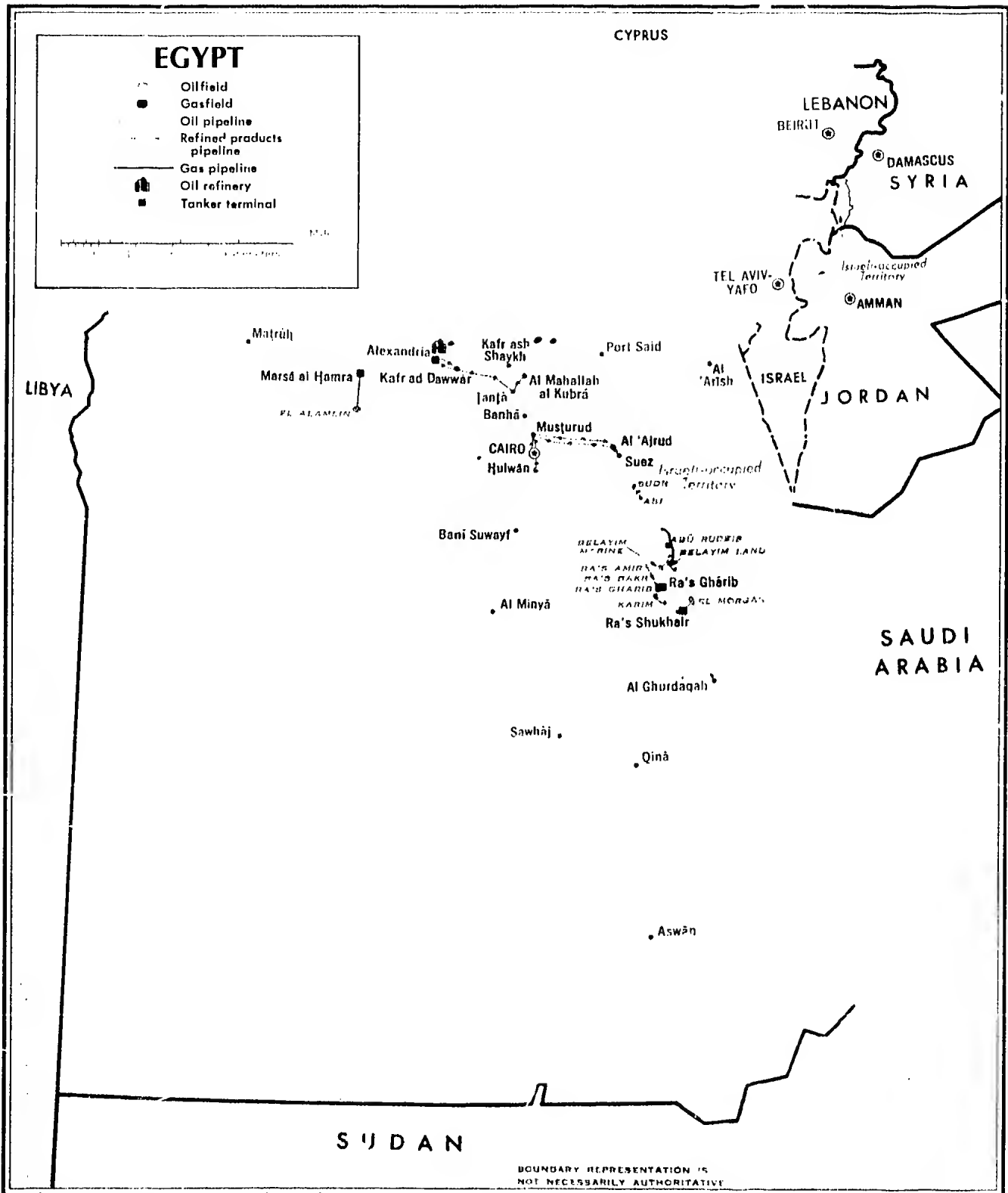
CRAN

Société de la Raffinage d'Alger

**C. Pipeline:**

TRAPSA

SONATRACH



511957 9-71

## EGYPT

## I. Introduction

Oil was first produced in Egypt in 1910, but significant production did not begin until the mid-1930s when the Ras Gharib field was discovered. In the 1950s, the prolific Belayim fields were discovered. More recently, joint US-Egyptian companies have discovered and begun exploiting the El Morgan and El Alamein fields.

In 1967 the Sinai oilfields, which then accounted for more than 80% of total production, were taken over by the Israelis. Subsequent hostilities have caused the shutdown of Egypt's two largest refineries, both at Suez. Construction of a proposed crude oil pipeline from Suez to Alexandria to bypass the closed Suez Canal has been delayed both by lack of financing and by hostilities in the area.

## II. Statistics on Operation

## A. Crude petroleum:

## 1. Production (thousand barrels per day)\*:

1966	1967	1968	1969	1970
119	108	183	245	330

Percent of world total: 0.73% (1970)

## 2. Reserves:

4.5 billion barrels (1970)

Percent of world total: 0.72%.

## 3. Refinery capacity (thousand barrels per stream day):

175.0 (1970)

## B. Natural gas:

## 1. Production:

N.A.

## 2. Reserves:

5 trillion cubic feet (1970) estimate

## C. Employment in petroleum sector:

N.A.

## III. Financial Data

## A. Oil revenues:

Negligible

## B. Local expenditures of foreign oil companies:

N.A.

## IV. Trade

## A. Exports:

## 1. Crude petroleum (thousand barrels):

1967	1968	1969
0	5,234	10,986

\*After June 1967, excludes fields under Israeli control.

2. *Refined products (tons):*

Product	1967	1968	1969
Gasoline.....	3,316	3,166	.....
Kerosine.....	340	305	35,250
Solarine.....	1,475	1,371	2,880
Diesel oil.....	3,683	0	4,419
Fuel oil.....	10	0	47,495
Other.....	32	19	118
<i>Total.....</i>	<i>8,856</i>	<i>4,861</i>	<i>90,562</i>

3. *Natural gas:*

*N.A.*

B. *Imports:*

1. *Crude petroleum (thousand barrels):*

1967	1968	1969
8,500	9,406	6,570

2. *Refined products (tons):*

Product	1969
Gasoline.....	2,056
Kerosine.....	279,880
Solarine.....	349,089
Diesel oil.....	48,170
Fuel oil.....	740,752
Other.....	5,401
<i>Total.....</i>	<i>1,425,348</i>

3. *Natural gas:*

*N.A.*

C. *Domestic consumption including bunkering (thousand barrels):*

1967	1968	1969
41,638	61,644	94,535

## V. Oil and Gas Fields and Related Installations

## A. Oilfields:

Name	Date discovered	Cumulative production through 1969 (barrels)
Abu Rudeis*.....	1957	13, 204, 947
Asi*.....	1948	34, 269, 304
Belayim onshore.....	1954	224, 777, 435
Belayim offshore*.....	N.A.	N.A.
El Alamein.....	1966	8, 660, 000
El Morgan.....	1965	101, 702, 000
Ras Amir.....	1965	1, 349, 407
Karim.....	1958	5, 844, 790
Ras Bakr.....	1958	31, 366, 471
Ras Gharib.....	1938	203, 912, 165
Sidri*.....	1959	4, 038, 736
Sudr*.....	1946	39, 198, 071
Others.....		42, 042, 369

## B. Gasfields:

N.A.

## C. Number of producing wells:

1. Oil—330 (1 Jul 1970)

2. Gas—N.A.

## D. Pipelines:

From	To	Concessionaire	Size (inches)	Length (miles)
<i>Crude oil:</i>				
El Morgan.....	Ras Shukeir.....	UAR/Pan American..	18	24
El Alamein.....	Marsa al Hamia.....	WEPCO.....	16	21
<i>Products:</i>				
Suez.....	Musturud.....			83
Suez.....	Cairo.....			74
Musturud..	Hulwan.....			31
Alexandria.....	Tanta.....			72.5
Alexandria.....	Kafr-ad-Dawwar.....			19
Al Ajrad.....	Cairo.....			77.5
Belayim.....	Abu Zanimah.....			35

\*These fields are on the Sinai Peninsula and are being operated by Israel. Current data are not available.

*E. Refineries:*

Location	Owner	Capacity (barrels per stream day)
Alexandria.....	Soc. Egyptienne pour le Raffinage....	35, 000
Suez*.....	El Nasr Petroleum Co.....	85, 000
Suez*.....	Suez Oil Processing Co.....	55, 000

**VI. Companies***A. Producing and operating:*

EGPC  
 AEO (BP/Shell) now El Nasr Petroleum Co  
 COPE  
 GPC  
 Ste. Cooperative Egyptienne des Petroles  
 Misr Petroleum Co.  
 Petroleum Cooperative Co.  
 International Egyptian Oil Co., Inc. (IEOC)  
 Pan American  
 Phillips  
 ENI  
 WEPCO  
 GUPCO

*B. Refining:*

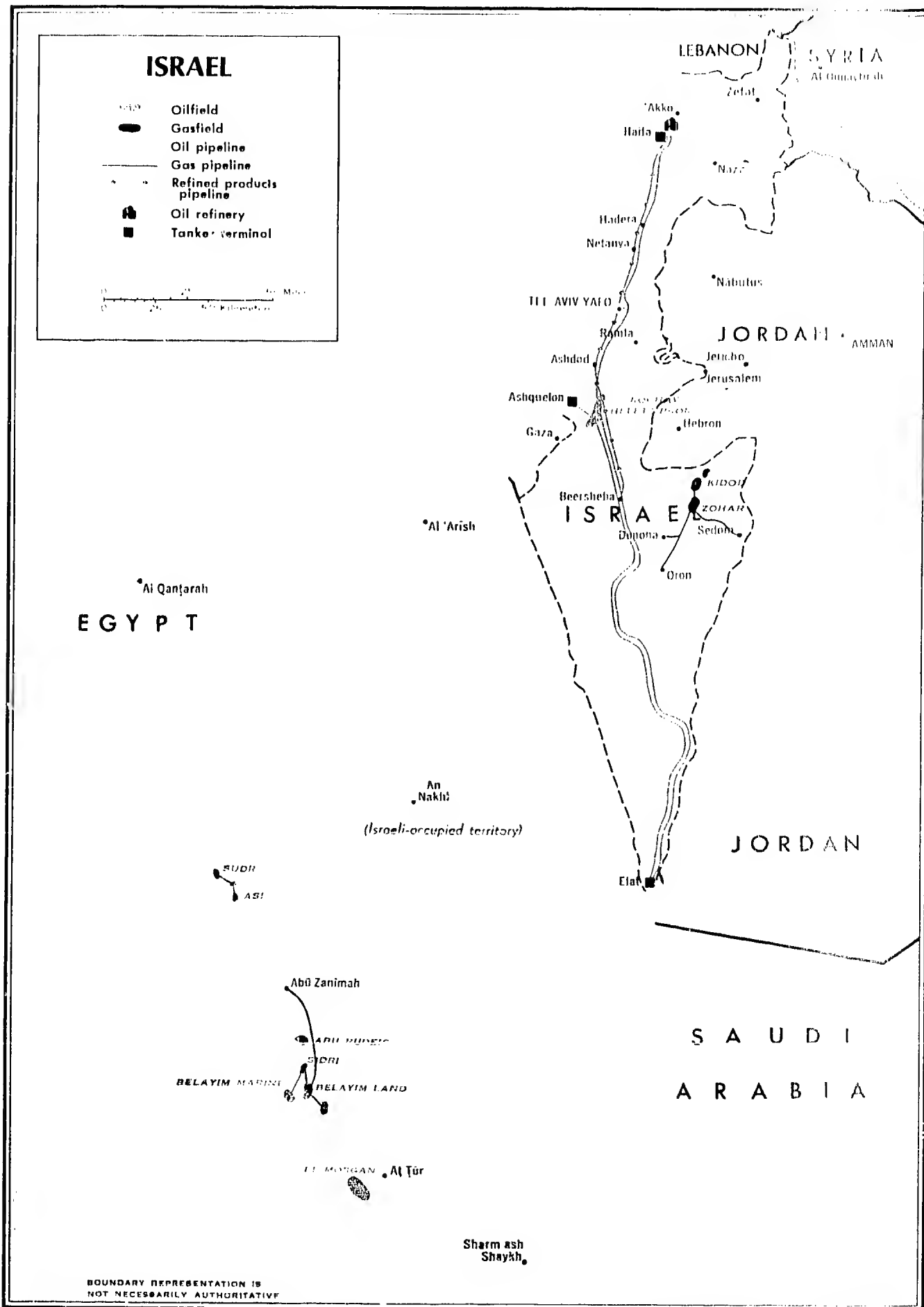
SERCOP  
 El Nasr Petroleum Co.  
 Suez Oil Processing Co.

*C. Pipeline:*

N.A.

---

\*Closed as a result of hostilities.



## ISRAEL

## I. Introduction

Israel has a very small oil and natural gas industry. The petroleum industry is a relatively recent phenomenon. Oil was first found in 1955 by the Lapidot-Israel Petroleum Company, Ltd., at Heletz. Another oil producing area was found at Kiklav in 1963. Since the June 1967 war, Israel has been pumping oil from captured Egyptian wells in the Sinai Peninsula. Oil production in 1969 of about 53,000 barrels per day was nearly triple the 1967 level, although production in Israel itself declined during the period. Recent petroleum developments in Israel were highlighted by the initial operation in Feb. 1970 of the oil pipeline running from Eilat to Ashkelon on the Mediterranean. Israel produces small quantities of natural gas from fields in the Dead Sea area.

## II. Statistics on Operation

## A. Crude petroleum:

## 1. Production (thousand barrels per day):

1966	1967	1968	1969	1970
4	20*	53*	52*	70*

Percent of world total: 0.15% (1970)

## 2. Reserves:

13 million barrels (1970 Israel only)

Percent of world total: 0.002% (1970)

## 3. Refining capacity (thousand barrels per stream day):

107.0 (1970)

## B. Natural gas:

## 1. Production (billion cubic feet):

1969	1970
5.5	4.2

## 2. Reserves:

72 billion cubic feet (1970)

## C. Employment in petroleum sector:

N.A.

## III. Financial Data

N.A.

## IV. Trade

## A. Exports:

## 1. Crude petroleum (thousand barrels):

1967	1968
7,700	11,779

\*Data for 1967-70 include production from captured Italo-Egyptian fields on the Sinai Peninsula.



2. *Refined products (thousand barrels):*

Product	1967	1968
Gasoline.....	1, 800	2, 225
Kerosine and jet fuel.....	1, 525	1, 875
Distillate fuel oil.....	3, 350	1, 200
Residual fuel oil.....	2, 800	0
Lubricants.....	20	0
Other.....	990	130
<i>Total.....</i>	<i>10, 485</i>	<i>5, 430</i>

3. *Natural gas:*

N.A.

B. *Imports:*1. *Crude petroleum (thousand barrels):*

1967	1968
------	------

36, 000	36, 850
---------	---------

2. *Refined products (thousand barrels):*

Product	1967	1968
Gasoline.....	151	112
Residual fuel oil.....	725	2, 664
Lubricant.....	132	160
Other.....	6	69

<i>Total.....</i>	<i>1, 014</i>	<i>3, 005</i>
-------------------	---------------	---------------

C. *Domestic consumption including bunkering (thousand barrels):*

1967	1968
------	------

23, 279	31, 011
---------	---------

V. **Oil and Gas Fields and Related Installations**A. *Oilfields (excluding Sinai):*

Name	Concessionaire	Date discovered	Cumulative production to July 1970 (thousand barrels)
Heletz Bror.....	Lapidoth	1955	9, 865, 000
Kakhav.....	N.A.	1963	3, 279, 000
Sinai Fields:			
Abu Rudeis			
Asi			
Belayim			
Sudr			
Sidri			

B. *Gasfields:*

Kidod

Zohar

C. *Number of producing wells:*

Oil—32 (1970)

Gas—N.A.

*D. Pipelines:*

From	To	Ownership	Size (inches)	Length (miles)	Capacity
Eilat.....	Haifa.....	Eilat-Haifa Pipeline Co.	16	257	N.A.
Eilat.....	Ashkelon....	Ashkelon Pipeline Co...	42	160	N.A.
Beersheba...	Haifa.....	Ashkelon Pipeline Co...	6	110	N.A.
Zohar.....	Sodom, Oron, Dimona	Eilat-Haifa Pipeline Co.	6	50	N.A.

*E. Refineries:*

Location	Owner	Capacity (thousand barrels per stream day)
Haifa.....	Haifa Refineries, Ltd..	107
Ashdod.....	Ashdod Refining Co..	75 (planned)

**VI. Companies**

*A. Producing, operating, or exploring:*

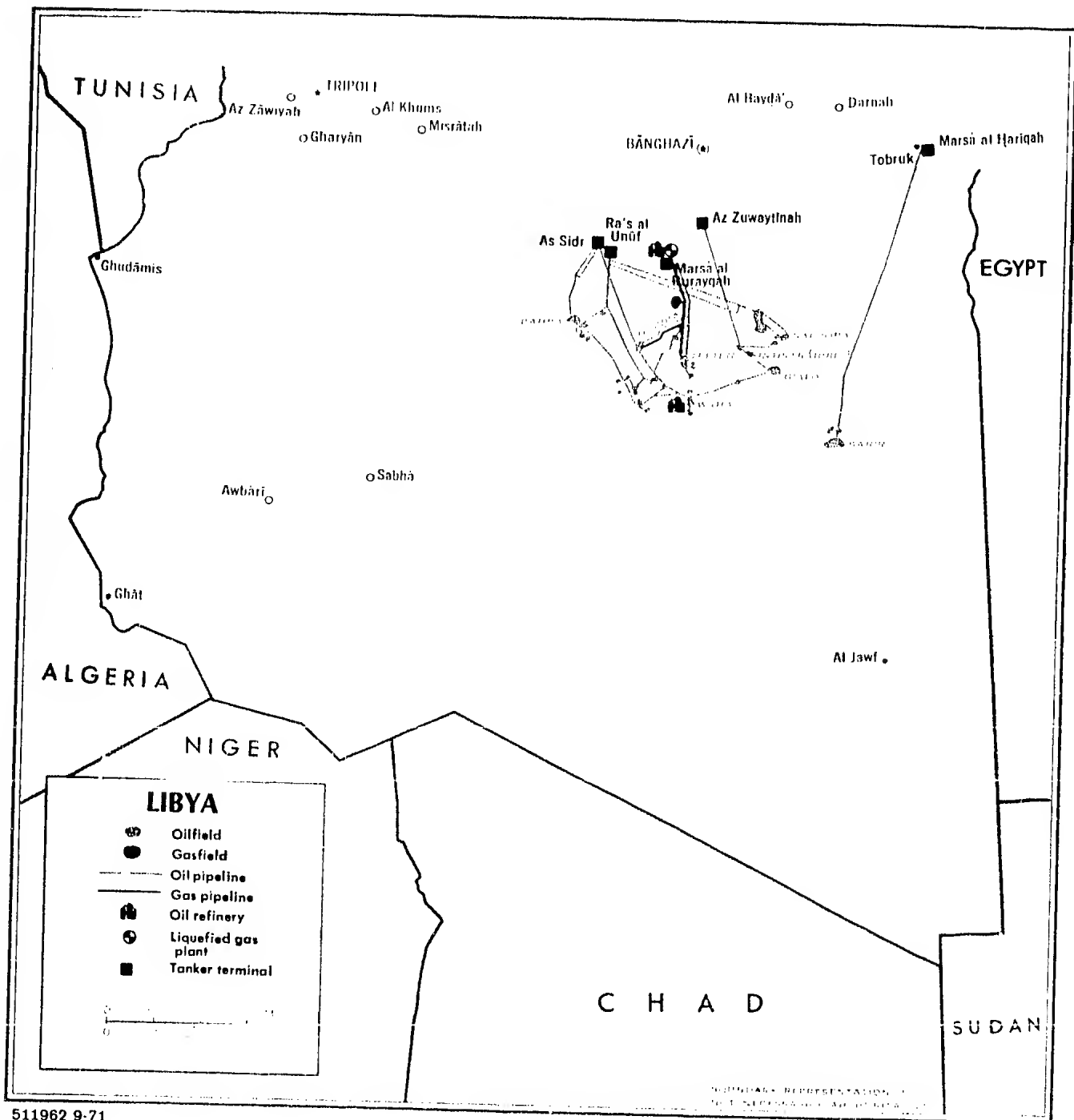
Lapidot Israel Oil Prospecting Co.  
Paz Oil Co., Ltd.  
Sonal Israel, Ltd.  
Israel National Oil Co., Ltd.  
Israel Fuel Corp., Ltd.  
Belpetco Israel, Ltd.  
Delek Israel Fuel Corp., Ltd.  
ARVA Oil Co., Ltd.  
Mayflower Oil Exploration Co.  
Isram Corp.  
Petroleum Service Ltd.

*B. Refining:*

Haifa Refineries, Ltd.  
Ashdod Refining Co.

*C. Pipeline:*

Ashkelon Pipeline Company Holdings, Ltd.  
Eilat-Haifa Pipeline Co.



## LIBYA

## I. Introduction

Libya's oil industry began a mere twelve years ago with the discovery of rich oil deposits in the Sirte Basin by Esso Libya. This discovery in 1959 was followed by other large finds in the north-central area, the most recent being the lucrative Intisar (Ildris) field discovered by Occidental Petroleum in 1967. Because of the high quality and low sulfur content of the oil, demand for Libyan oil is high, especially in nearby Western Europe. As a result, Libya is one of the world's largest oil exporters.

More than 95% of the country's oil output is exported (refining and marketing of oil in Libya remains minimal).

Closure of the Suez Canal since 1967 has spurred demand for Libyan oil and has caused a rapid expansion in production and exports. More than two-thirds of Libya's oil is exported to the EC countries, with West Germany the major importer.

US-owned firms dominate Libyan oil production, accounting for more than 90% of production and a total investment of about \$1.2 billion. The country's Petroleum Law was last revised in 1966. At that time, provisions were added to bring payments more in line with the standard OPEC terms and to give the government preferential treatment (bonuses) from the bidding oil concessionaire.

## II. Statistics on Operation

## A. Crude petroleum:

## 1. Production (thousand barrels per day):

1966	1967	1968	1969	1970
1,507	1,743	2,606	3,111	3,321

Percent of world total: 7.3% (1970)

## 2. Reserves:

30 billion barrels (1970)

Percent of world total: 4.9% (1970)

## 3. Refining capacity (thousand barrels per stream day):

9.5 (1969)—excluding 2.4 at the Oasis Wahla refinery for company use only.

## B. Natural gas:

## 1. Production (thousand cubic feet per day):

1966	1967	1968	1969	1970
354,781	368,518	N.A.	N.A.	N.A.

## 2. Reserves:

30 trillion cubic feet (1969)

## C. Employment in petroleum sector:

	1967	1969
Libyans.....	3,536	4,038
Foreign nationals.....	1,842	2,357
Total.....	5,378	6,395

**III. Financial Data****A. Government oil revenues (million US\$):**

1967	1968	1969	1970
631	952	1, 143	1, 500 (est.)

Percent of total government revenues: 75%-80% (1970)

**B. Local expenditures of foreign oil companies (million US\$):**

225 (1969)

**IV. Trade****A. Exports:****1. Crude petroleum (thousand barrels):**

1970

1, 206, 836

**2. Refined products (thousand barrels):**

1967      1968

0      0

**3. Natural gas:**

1967      1968      1969      1970

None      None      None      None

**B. Imports:****1. Crude petroleum (thousand barrels):**

1967      1968      1969      1970

0      0      0      0

**2. Refined products (thousand barrels):**

Product      1967      1968

Gasoline.....	1, 146	1, 592
Kerosine and jet fuel.....	178	195
Distillate fuel oil.....	1, 355	1, 952
Residual fuel oil.....	279	332
Lubricants.....	95	122

Total..... 3, 053      4, 193

**3. Natural gas:**

N.A.

**C. Domestic consumption including bunkering (thousand barrels):**

1967      1968      1969      1970

5, 550      7, 469      N.A.      N.A.

## V. Oil and Gas Fields and Related Installations

## A. Oilfields (major):

Name	Concessionaire	Date discovered	Cumulative production through 1969 (barrels)
Amal.....	Mobil.....	1959	193, 750, 000
Dahra.....	Oasis.....	1959	283, 874, 970
Gialo.....	N.A.....	1961	489, 470, 010
Intisar (Idris).....	Occidental.....	1967	185, 915, 724
Nafoors.....	Amoseas.....	1965	243, 300, 000
Raguba.....	Sinclair, Esso, Grace.....	1961	220, 918, 087
Samah.....	N.A.....	1961	127, 519, 171
Sarir.....	B.P./Hunt.....	1961	232, 675, 505
Waha.....	Oasis.....	1960	283, 011, 715
Zelten.....	Esso Libya.....	1959	1, 080, 326, 994

## B. Gasfields:

Name	Concessionaire	Date discovered	1969 production (million cubic feet per day)
M'Berber.....	Esso/Standard.....	1966	11, 300
Moghil.....	Esso/Standard.....	1965	17, 699
Sahl.....	Esso/Standard.....	1965	7, 304
Hateiba.....	Esso/Standard.....	1966	9, 980
Wadayat.....	Esso/Standard.....	N.A.	N.A.
Arceida.....	Esso/Standard.....	1967	12, 800
Sarra.....	Esso/Standard.....	1966	5, 307
Tebot.....	Esso/Standard.....	1967	5, 650
Messallah.....	Esso/Serte.....	1962	2, 175
Ouei Chebi.....	CPTL.....	1959	8, 100
Bik el Rheze.....	Oasis.....	1961	4, 340
Arish.....	Amoseas.....	1964	1, 600
Barrut.....	Mobil.....	1966	10, 930

## C. Number of producing wells:

1. Oil—869
2. Gas—N.A.

D. *Pipelines:*

	Concessionaire	Length (miles)	Size (inches)
Zelten/Marsa El Brega.....	Esso.....	107	30
Jebel field/Zelten.....	Esso.....	22	24
Raguba field/Zelten-Marsa El Brega system (Esso Libya's).	Esso Sirte/Liamco Grace....	55	20
Dahra field/Es Sider trunk line...	Oasis.....	88	30
Dahra field/Es Sider terminal.....	Oasis.....	122	30
Waha, Samah, Belhadan and Lagut fields/Dahra.	Oasis.....	170	32
Waha-Zaggut/Samah.....	Oasis.....	30	24
Waha/Gialo.....	Oasis.....	95	30
Amal field/Ras Lanuf.....	Mobil/Gelsenberg/Amoseas..	177	30
Amal field/Ras Lanuf loop.....	Mobil/Gelsenberg/Amoseas..	141	36
Hofra field/trunk line.....	Mobil/Gelsenberg/Amoseas..	36	24
Ora field/trunk line.....	Mobil/Gelsenberg/Amoseas..	83	24
Trunk/Ras Lanuf.....	Mobil/Gelsenberg/Amoseas..	55	30
Beda field/Mobil Gelsenberg's Ras Lanuf line.	Amoseas.....	15	24
Kotla/Beda-Ora line.....	Amoseas.....	7	14
Khuff field/Beda field (Mobil Gelsen- berg's Ras Lanuf).	Aminoil.....	20	8
Umin Farid/Hofra field (Mobil Gel- senberg's Ras Lanuf).	Phillips.....	17	6
Nafora field/Amal Ras Lanuf line..	Amoseas.....	25	20
Serir field/Tobruk.....	BP Libya/Bunker Hunt.....	312	34
Intisar field/Zueitina.....	Occidental.....	135	40
Intisar/Augila.....	Occidental.....	40	24
Intisar D/Intisar A.....	Occidental.....	14	40
Megid/Nafora.....	Aquitaine.....	68	14
Dor Harada/Ora.....	Aquitaine.....	52	10. 75
Dor/Khuff.....	Aquitaine.....	14	10

*E. Refineries:*

Location	Owner	Capacity (thousand barrels per stream day)
Marsa El Brega.....	Esso/Standard.....	9.5
Waha.....	Oasis.....	2.4

**VI. Companies**

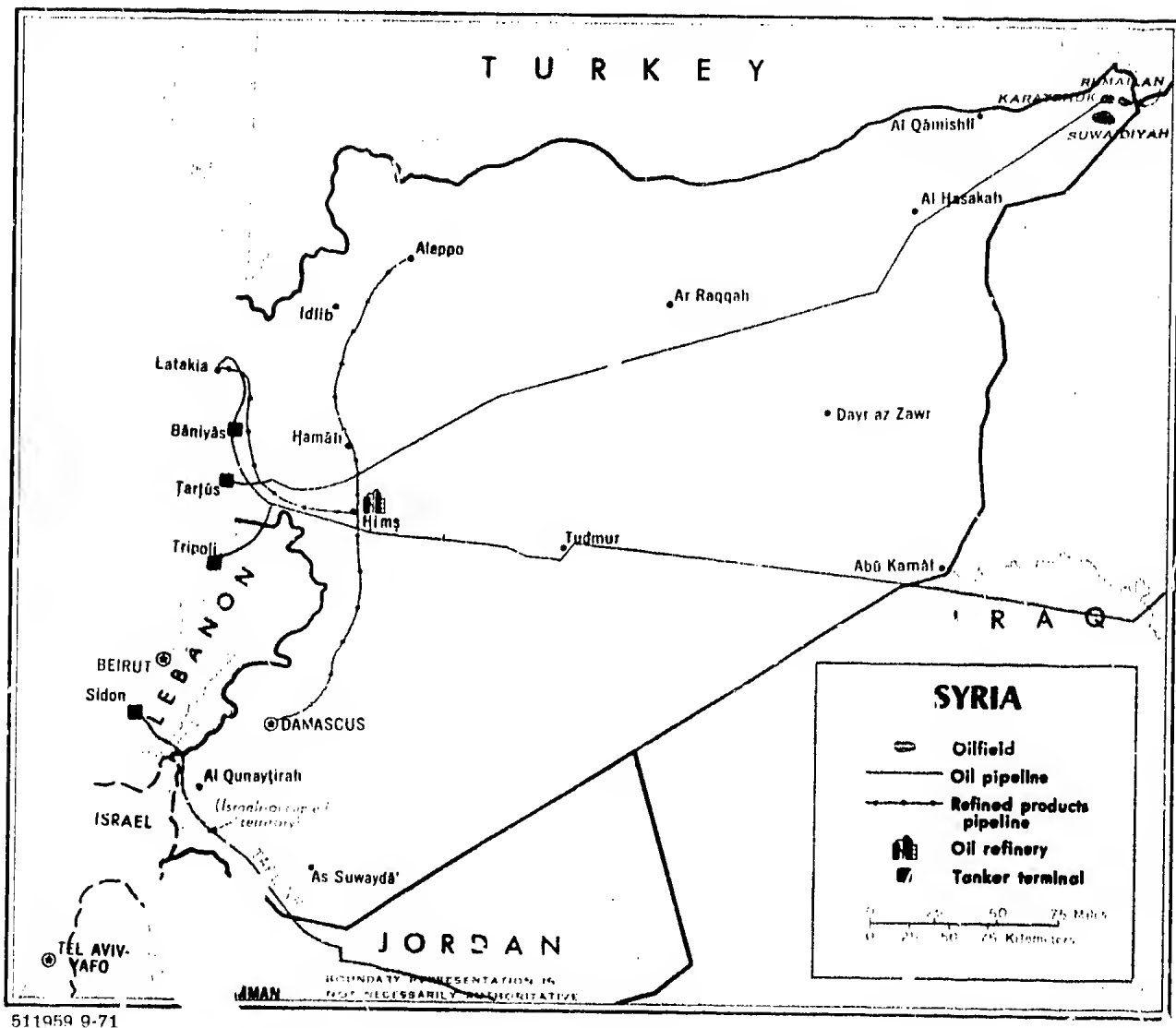
Amerada Petroleum Co. of Libya\*  
 BP Exploration Co. (Libya) Ltd.  
 California Asiatic Co.\*\*  
 Continental Oil Co. of Libya\*\*\*  
 Esso Sirte Inc.  
 Esso Standard Libya Inc.  
 Gelsenberg—Libyan Branch  
 Grace Petroleum Corporation  
 Libyan American Oil Co.  
 Marathon Petroleum of Libya Ltd.\*\*\*  
 Mobii Oil Libya Ltd.  
 Nelson Bunker Hunt  
 Amoco Libya Oil Co.  
 Texaco Overseas Petroleum Ltd.\*\*  
 Ausonia Mineraria—S.p.A.  
 Compagnia Recherche Idrocarburi (CORI)  
 Compagnie des Petroles Total (Libye)  
 Wintershall-Libya & Elwerath Oil Co. Libya  
 Libyan Atlantic Co.  
 Libya Shell N.V.  
 AGIP S.p.A.—Libyan Branch  
 American Mining and Exploration Co.  
 Aquitaine—Libya  
 Bosco Middle East Oil Corp.  
 Circle Oil Co. S.A.  
 Libyan Clark Oil Co.  
 Occidental of Libya Inc.  
 Schoven Chemie—Libya  
 Scirtica Shell Ltd.  
 Union Rheinische—Libya  
 Libyan National Petroleum Corporation

\*Operated by Oasis Oil Co. of Libya with Shell Exploratie en Productie Maatschappij (Libya).

\*\*Operated by American Overseas Petroleum Ltd.

\*\*\*Operated by Oasis Oil Co. of Libya.





## SYRIA

**I. Introduction**

Petroleum production and refining facilities are owned by the government and operated through the General Petroleum Organization (GPO). Oil was first discovered by private foreign companies in 1956. Production, however, was delayed until 1968, when it was undertaken by the GPO with Soviet technical assistance.

The Homs refinery, constructed in 1958 to handle crude oil purchased from the IPC, was modified in 1969 to handle the heavy, sulfurous domestic crude oil. At the same time, refinery capacity was increased to 59,000 barrels per stream day. The National Pipeline, which runs from the fields in the northeast to Homs and Tartus, also is being expanded from its current capacity of 90,000 barrels per day. The line is expected to have a capacity of 150,000 barrels per day to Homs and 90,000 barrels to Tartus in the near future. Pipelines owned by IPC and ARAMCO also cross Syrian territory.

**II. Statistics on Operation****A. Crude petroleum:****1. Production (thousand barrels per day):**

1968	1969	1970
27	48	83

Percent of world production: 0.18% (1970).

**2. Reserves:**

1.2 billion barrels.

Percent of world total: 0.19% (1970).

**3. Refinery capacity (thousand barrels per stream day):**

59 (1970).

**B. Natural gas:****1. Production:**

N.A.

**2. Reserves:**

750 billion cubic feet.

**C. Employment in petroleum sector:**

N.A.

**III. Financial Data****A. Oil:\***

	1969 (million US\$)
IPC.....	53
Tapline (ARAMCO)	5
GPO.....	N.A.
Percent of total government revenue:	N.A.

**B. Local expenditures of foreign oil companies:**

None

\*IPC and Tapline revenues are transit and royalty fees as opposed to revenues from direct oil production. These payments were increased in 1971.

**IV. Trade****A. Exports and reexports:****1. Crude petroleum (thousand barrels) (excluding IPC and Tapline):**

1967	1968
------	------

0	9,955
---	-------

**2. Refined products (thousand barrels):**

1967	1968
------	------

Gasoline.....	259	0
---------------	-----	---

Other.....	0	83
------------	---	----

Total.....	259	83
------------	-----	----

**3. Natural gas:**

1967	1968
------	------

N.A.	N.A.
------	------

**B. Imports:****1. Crude petroleum (thousand barrels):**

1967	1968
------	------

7,945	7,939
-------	-------

**2. Refined products (thousand barrels):**

1967	1968
------	------

Gasoline.....	0	161
---------------	---	-----

Kerosine and jet fuel.....	0	178
----------------------------	---	-----

Distillate fuel oil.....	3,790	2,167
--------------------------	-------	-------

Residual fuel oil.....	0	1,199
------------------------	---	-------

Lubricants.....	0	97
-----------------	---	----

Other.....	74	65
------------	----	----

Total.....	3,864	3,867
------------	-------	-------

**C. Domestic consumption including bunkering (thousand barrels):**

1967	1968
------	------

11,917	11,699
--------	--------

**V. Oil and Gas Fields and Related Installations****A. Oilfields:**

Name	Owner	Date discovered	Cumulative production through first half 1970 (million barrels)
Suwaidiyah.....	GPO.....	1959	32
Karatchuk-Hamazah.....	GPO.....	1956	
Rumailan.....	GPO.....	1956	
Shibissa.....	GPO.....	1968	

## B. Gasfields:

Name	Owner	Date discovered	Test capacity (million cubic feet per day)
Al-Sukhne.....	GPO.....	1968	17.6

C. Number of producing wells:  
N.A.

## D. Pipelines:

From	To	Owner	Size (inches)	Length (miles)	Capacity (barrels per day)	Total for IPC system
<b>Crude oil:</b>						
Karatchuk.....	Homs.....	GPO.....	20/22	403	90,000	1,080,000
Homs.....	Tartus.....	GPO.....	18			
Qaisumah, Saudi Arabia..	Sidon, Lebanon..	ARAMCO (Tapline)	30/31	754	475,000	
Kirkuk.....	Homs.....	IPC.....	12/16/30/32	494	600,000	
Homs.....	Banais.....	IPC.....	24/26	62	600,000	
Homs.....	Tripoli.....	IPC.....	12/16	38	500,000	
<b>Products:</b>						
Homs.....	Aleppo.....	GPO.....	6	112.8	15,600	1,080,000
Homs.....	Damascus.....	GPO.....	6	103	15,600	
Homs.....	Latakia.....	GPO.....	6	103	15,600	
Latakia.....	Homs.....	GPO.....	6	103	15,600	

## E. Refineries:

Location	Owner	Capacity (thousand barrels per stream day)
Homs.....	GPO.....	59.0

**VI. Companies**

A. *Producing and operating:*

GPO

B. *Refining:*

GPO

C. *Pipelines:*

GPO

ARAMCO (Tapline)

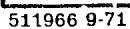
IPC

## Southern Mediterranean Sea Area Refineries

Company and refinery location	Crude capacity (b/sd)	Cat-cracking capacity	Cat-reforming capacity
<b>ALGERIA</b>			
Cla. Raffinage en Afrique du Nord (CRAN), Hassi Messaoud.....	3,300	.....	.....
Soc. de Raffinage d'Alger, Maison Carree.....	45,000	.....	13,000
<b>TOTAL.....</b>	<b>48,300</b>	<b>.....</b>	<b>13,000</b>
<b>SONATRACH</b>			
Arzew.....	50,000	(Under construction)	
Skikda.....	50,000	(Planned)	
<b>CYPRUS</b>			
Cyprus Petroleum Refinery Ltd., Larnaca.....	13,500	(Under construction)	
<b>EGYPT</b>			
Alexandria Petroleum Co., Alexandria.....	35,000	.....	1,200
El Nasr Oilfields Co., Musturud*.....	85,000	.....	2,800
Suez Oil Processing Co., Musturud*.....	55,000	.....	10,000
<b>TOTAL.....</b>	<b>175,000</b>	<b>.....</b>	<b>14,000</b>
<b>GREECE</b>			
Hellenic Petroleum Refining Co., Aspropyrgos...	40,000	.....	9,000
Thessaloniki Refining Co., Thessaloniki.....	62,000	.....	5,500
<b>TOTAL.....</b>	<b>102,000</b>	<b>.....</b>	<b>14,500</b>
Omega, Megara.....	140,000	(Planned)	
<b>ISRAEL</b>			
Haifa Refineries Ltd., Haifa.....	107,000	.....	16,000
Haifa Refineries Ltd., and Israel Petro-chemical Enterprises, Ashdod.....	75,000	(Planned)	
<b>LEBANON</b>			
Iraq Petroleum Co. Ltd., Tripoli.....	30,000	.....	3,700
Mediterranean Refining Co., Sidon.....	17,500	.....	3,100
<b>TOTAL.....</b>	<b>47,500</b>	<b>.....</b>	<b>6,800</b>
<b>LIBYA</b>			
Esso Standard Libya, Marsa El Brega.....	9,500	.....	2,200
Gulf & Libyan Petroleum Co.....	25,000	(Planned)	
Lipetco, Sirte.....	25,000	(Planned)	
Libyan Government, Ashland Oil Corp., and AGIP, Eastern Libya.....	40,000	(Planned)	
<b>MOROCCO</b>			
Ste. Cherifienne des Petroles, Sidi Kacem.....	9,000	4,000	1,200
Soc. Marocaine Italienne de Raffinage, Mohammedia.....	26,000	.....	6,500
<b>TOTAL.....</b>	<b>35,000</b>	<b>4,000</b>	<b>7,700</b>
<b>SYRIA</b>			
Government Petroleum Establishment, Homs....	59,000	.....	2,500
<b>TUNISIA</b>			
Soc. Tunisie-Italienne de Raffinage, Bizerte.....	22,500	.....	3,300
<b>TURKEY</b>			
Anadolu Tasfiyehnesi A.A., Mersin.....	95,000	.....	9,080
Istanbul Petrol Rafinerisi A.S., Izmit.....	110,000	19,500	9,600
Turkiye Petrolieri A.G.			
Batman.....	15,000	3,000	1,300
Izmir.....	66,000	.....	.....
<b>TOTAL.....</b>	<b>286,000</b>	<b>22,500</b>	<b>19,980</b>
Turkiye Petrolieri A.G., Trabzon.....	70,000	(Planned)	9,980

\*Both plants shut down following shelling and moved to Musturud from Suez.

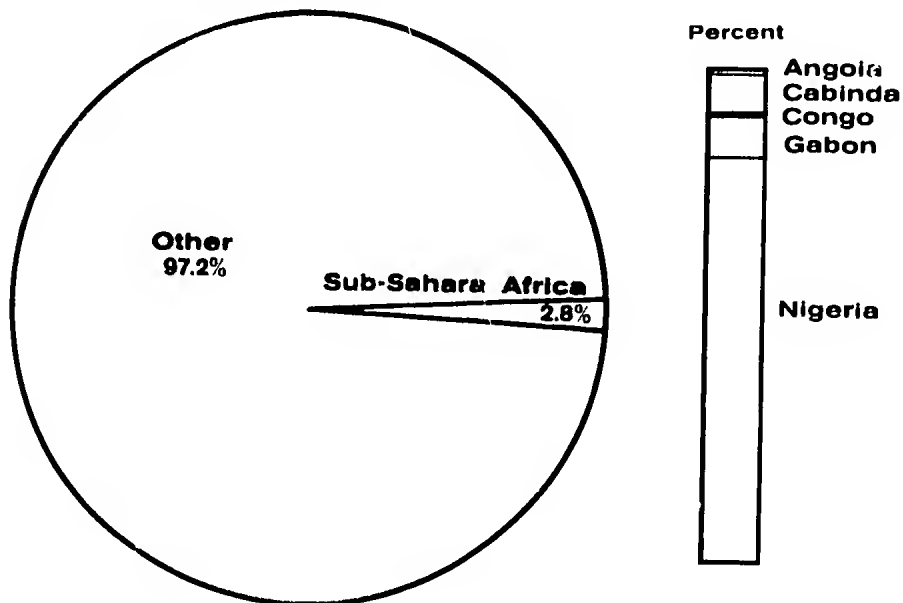
## SUB-SAHARA AFRICA



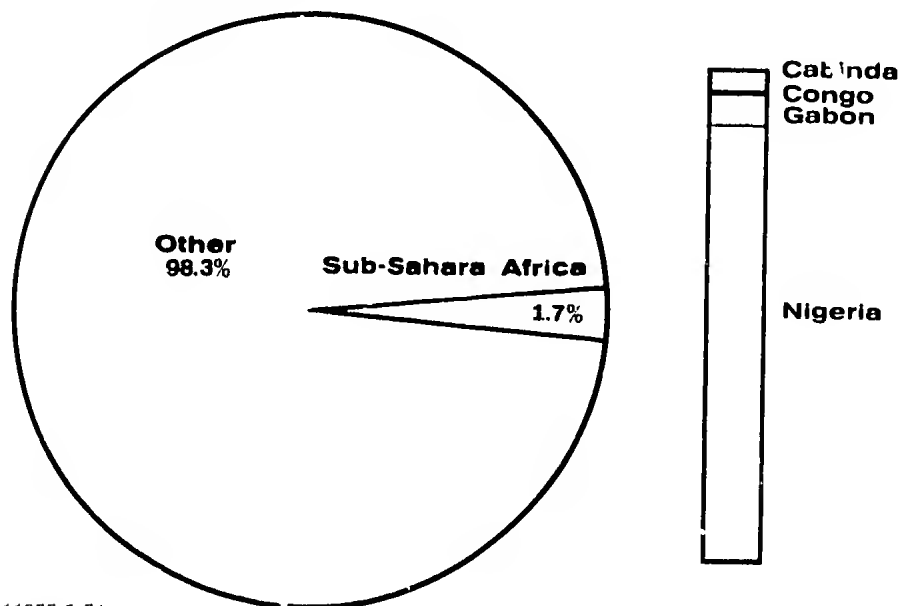


## SUB-SAHARA AFRICA OIL SUMMARY, 1970

### WORLD PRODUCTION



### WORLD RESERVES



511977 9-71

## Summary of Gas and Oil Production for Sub-Sahara Africa

	Oil Production (Thousand b/d)			Natural Gas (Billion Cu. Ft.)		
	1969	1970	1st Qtr 1971	1969	1970	1st Qtr 1971
Angola.....	10	14	14	7.6	9.3	0.6
Cabinda.....	39	90	100	.....	.....	.....
Congo.....	1	1	1	.....	.....	.....
Gabon.....	101	106	120	0.8	1.9	0.2
Nigeria.....	540	1,083	1,446	145.6	N.A.	N.A.
Total.....	691	1,294	1,681	154.0	N.A.	N.A.



511961 9-71

## NIGERIA

### I. Introduction

The oil industry dates back to 1908, but assumed real significance only in the mid-1950s, when major onshore deposits were located in eastern Nigeria and subsequently in the Niger Delta and in the western part of the country. In the mid-1960s, large offshore deposits were located, and several other discoveries have been made. In March 1971, production was almost 1.5 million barrels per day.

The civil war caused some interruption, but oil activities picked up quickly after the war ended in January 1970. In early 1970, Shell/BP announced a \$160 million onshore and offshore expansion program. This outlay, the largest made by Shell/BP since it began its Nigerian operations in the 1930s, also involves a new pipeline from its western fields to the oil terminal at Bonny. Shell/BP production approached 1.1 million barrels per day in March 1971. Other companies currently producing are Gulf, Mobil, ENI/Phillips, and Texaco-Chevron.

### II. Statistics on Operation

#### A. Crude petroleum:

##### 1. Production (thousand barrels per day):

1966	1967	1968	1969	1970
418	310	138	540	1,083

Percent of world total: 2.4% (1970)

##### 2. Reserves:

9 billion barrels (1970)

Percent of world total: 1.4% (1970)

##### 3. Refining capacity (thousand barrels per stream day): 55 (1970)

#### B. Natural gas:

##### 1. Production (billion cubic feet):

1968	1969
51.6	145.6

##### 2. Reserves:

6 trillion cubic feet (1970)

#### C. Employment in petroleum sector:

Nigerians . . . . . 17,309

Expatriates . . . . . 1,574

### III. Financial Data

#### A. Government oil revenues, by calendar year (million US\$):

1968	1969	1970
44.8	47.4	280.0

Percent of total government revenues: 15% (fiscal year 1970)

#### B. Local expenditures of foreign oil companies:

Recent data not available

**IV. Trade****A. Exports:**

1. <i>Crude petroleum (thousand tons):</i>			
	1967	1968	1969
	14,774	6,890	26,867
			50,883
2. <i>Refined products (thousand barrels):</i>			
	Product	1967	1968
	Gasoline.....	116	143
	Kerosine and jet fuel.....	89	79
	Distillate fuel oil.....	139	147
	Residual fuel oil.....	339	10
	Lubricants.....	40	20
	Other.....	60	49
	<i>Total.....</i>	<i>783</i>	<i>448</i>

**B. Imports:**

1. <i>Crude petroleum (thousand barrels):</i>			
	1968	1969	
	6	0	
2. <i>Refined products (thousand barrels):</i>			
	Product	1968	1969
	Gasoline.....	1,067	2,428
	Kerosine and jet fuel.....	584	1,544
	Distillate fuel oil.....	966	2,512
	Residual fuel oil.....	962	2,175
	Lubricants.....	244	75
	Other.....	36	206
	<i>Total.....</i>	<i>3,859</i>	<i>8,940</i>

**C. Domestic consumption including bunkering (thousand barrels):**

	1967	1968
	9,643	8,498

**V. Oil and Gas Fields and Related Installations****A. Oilfields (major):****1. Offshore:**

Name	Concessionaire	Date discovered	Cumulative production through 1969 (barrels)
Okan.....	Gulf.....	1964	80,932,414
Maren.....	Gulf.....	1965	12,977,053
Delta South.....	Gulf.....	1965	13,573,683

## 2. Onshore:

Name	Concessionaire	Date discovered	Cumulative production through 1969 (barrels)
Agbada.....	Shell/B.P.....	1960	17, 963, 300
Bomu.....	Shell/B.P.....	1958	151, 719, 300
Clomaro.....	N.A.....	N.A.	41, 566, 500
Imo River.....	Shell/B.P.....	1959	88, 610, 500
Kokori.....	N.A.....	1961	19, 294, 200
Korokoro.....	Shell/B.P.....	1959	29, 812, 300
Umuechem.....	N.A.....	1959	46, 910, 400
Uzere West.....	Shell/B.P.....	1960	21, 522, 300
Others.....	N.A.....	N.A.	44, 781, 922

## B. Gasfields:

Name	Concessionaire	Date of production	Million cubic feet, 1966 yearly average
Bomu.....	N.A.....	1958	72, 484. 8
Umuechem.....	N.A.....	1963	29, 086. 8
Imo River.....	N.A.....	1961	25, 000. 0
Korokoro.....	N.A.....	1961	18, 166. 9
Afam.....	N.A.....	1957	16, 221. 8
Okan.....	N.A.....	1964	9, 573. 6

## C. Number of producing wells:

1. Oil—167 (1969)
2. Gas—N.A.

## D. Pipelines:

1. Oil:

Name	From	To
Trans-Niger.....	Korkori and Ughelli..	Bonny.....
Okan.....	Offshore fields.....	Offshore loading berth..
	Afam, Imo River, Forcados.	Port Harcourt Refinery.
Trans-Forcados...	Ughelli.....	Forcados, offshore terminal.

Owner	Size (inches)	Length (miles)	Capacity (barrels per day)
Shell/B.P....	10/24	137	N.A.
Gulf.....	26	6.5	N.A.
Shell/B.P....	8/6/8	25	N.A.
Shell/B.P....	N.A.	N.A.	350, 000

## 2. Gas:

From	To	Owner	Length (miles)	Capacity (billion cubic feet)
Afam.....	Apara.....	Shell/B.P.....	52.5	3.3
Korokoro.....	Afam.....			
Imo River.....	Aba.....			
Bomu.....	Port Harcourt Refinery...			

## E. Refineries:

Location	Owner	Capacity (thousand barrels per stream day)
Port Harcourt... ..	Nigerian Petroleum Refining Co., Ltd.....	55.0

## VI. Companies

## A. Producing and operating:

Gulf Oil Co.  
 Shell/B.P.  
 SAFRAP (Nigeria, Ltd.  
 AGIP/Phillips  
 Tenneco Group:  
   Tennessee Gas Transmission  
   Sunray DX Oil Co.  
   Sinclair Oil Corp.  
 Mobil Exploration (Nigeria)  
 Amoseas  
 Esso Standard  
 Texaco Nigeria, Ltd.  
 Total Nigeria, Ltd.  
 Union Oil (Nigeria)

## B. Refining:

Nigerian Petroleum Refining Co.  
   Nigerian government ..... 50%  
   B.P. .... 25%  
   Shell ..... 25%

## C. Pipeline:

Shell/B.P.  
 Gulf

Sub-Sahara Africa Refineries			
Company and refinery location	Crude capacity (b/sd)	Cat-cracking capacity	Cat-reforming capacity
<b>ANGOLA</b>			
Companhia de Petroleos de Angola, Luanda.....	14,000		2,000
Sta. Portuguesa de Petroleos, Lobito.....	10,000	(Under construction)	
<b>CONGO</b>			
Soc. Conge Italienne (SOCIR), Kinshasa (Monrovia) ..	13,300		3,500
<b>ETHIOPIA</b>			
Ethiopian Government, Addis Ababa.....	11,000		2,000
<b>GABON</b>			
Soc. Equatoriale de Raffinage, Port Gentil.....	12,500		1,500
<b>GHANA</b>			
Ghanian-Italian Petroleum Co., Ltd., Tema.....	20,000		6,500
<b>IVORY COAST</b>			
Ste. Ivoirienne de Raffinage, Vridi-Abidjan.....	19,000		2,700
<b>KENYA</b>			
East African Oil Refineries Ltd., Mombasa.....	50,500		4,800
<b>LIBERIA</b>			
Liberia Refining Co., Monrovia.....	10,000		
<b>MALAGASY</b>			
Societe Malgache de Raffinage, Tamatave.....	12,500		2,000
<b>MOZAMBIQUE</b>			
Sociedad Nacional de Refinacao de Petroleos, Laurencio Marques.....	40,600		2,750
<b>NIGERIA</b>			
Nigerian Petroleum Refining Co. Ltd., Port Harcourt.....	55,000		4,600
<b>RHODESIA</b>			
Central African Petroleum Refineries Ltd., Umtali.	21,000	7,500	3,000
<b>SENEGAL</b>			
Soc. Africaine de Raffinage, Dakar.....	12,600		1,750
<b>SIERRA LEONE</b>			
Hafsan Refineries, Freetown.....	10,000		
<b>SOUTH AFRICA</b>			
Caltex Oil (S.A.) Ltd., Cape Town.....	37,500		11,000
Mobil Refining Co. of South Africa (Pty) Ltd., Durban.....	53,300	14,000	6,200
National Petroleum Refiners of South Africa (Pty) Ltd., Sasolburg.....	55,000	15,800	10,700
South African Petroleum Refineries (Pty) Ltd., Durban.....	90,000	16,000	30,000
South African Torbanite Mining and Refining Co. Ltd., Transvaal.....	3,900		
<b>TOTAL.....</b>	<b>239,400</b>	<b>45,800</b>	<b>57,900</b>
<b>SUDAN</b>			
Shell and BP (Sudan) Ltd., Port Sudan.....	21,000		1,500
<b>TANZANIA</b>			
Tanzanian Italian Petroleum Co., Dar es Salaam..	13,800		3,500
<b>ZAMBIA</b>			
ENI and Endico, Noolu.....	22,000	(Planned)	

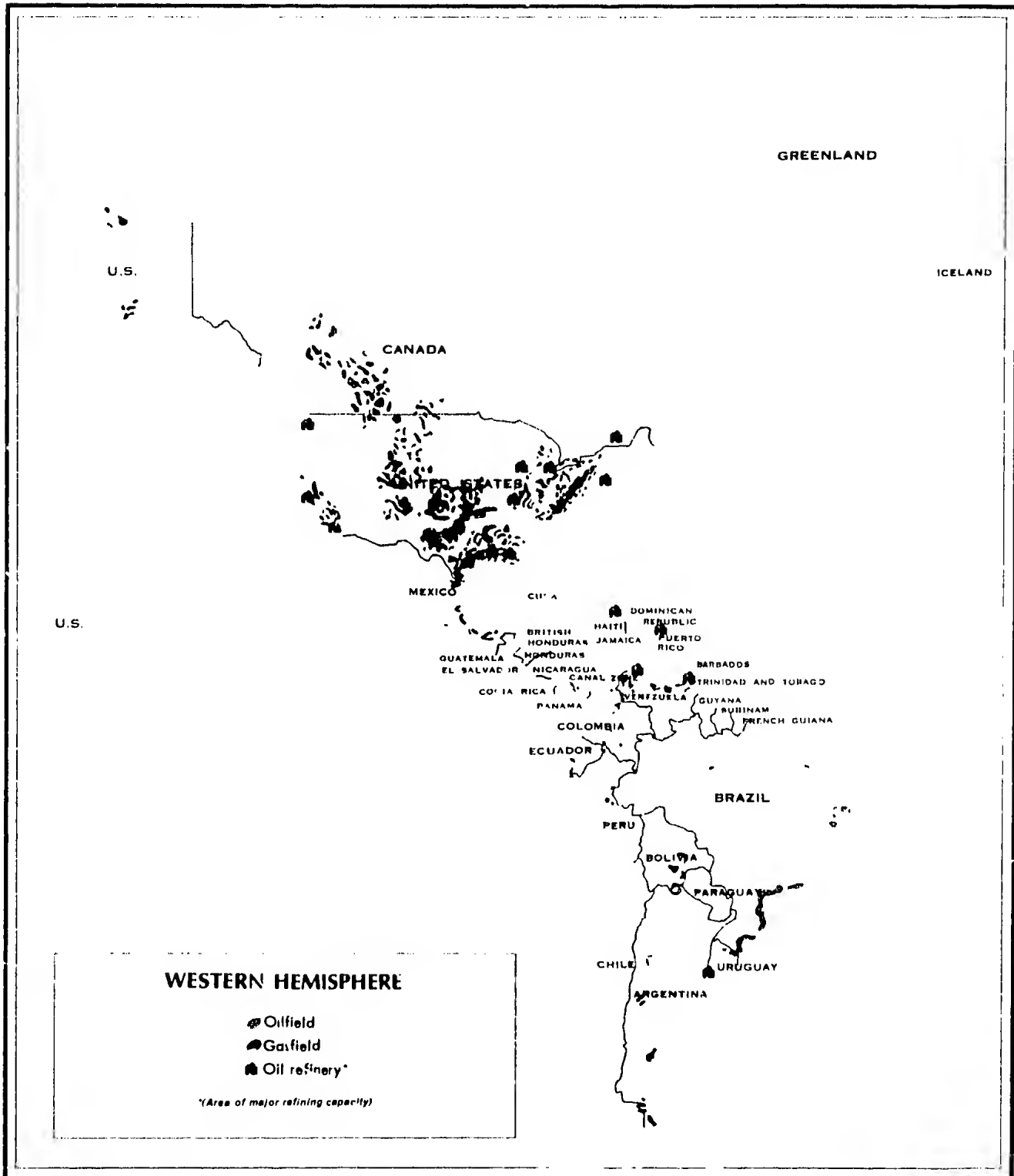


# WESTERN HEMISPHERE

CIA OER WORLD O.I. 71  
UNCLASSIFIED

Approved For Release 2001/09/28 : CIA-RDP85T00875R000200050001-0

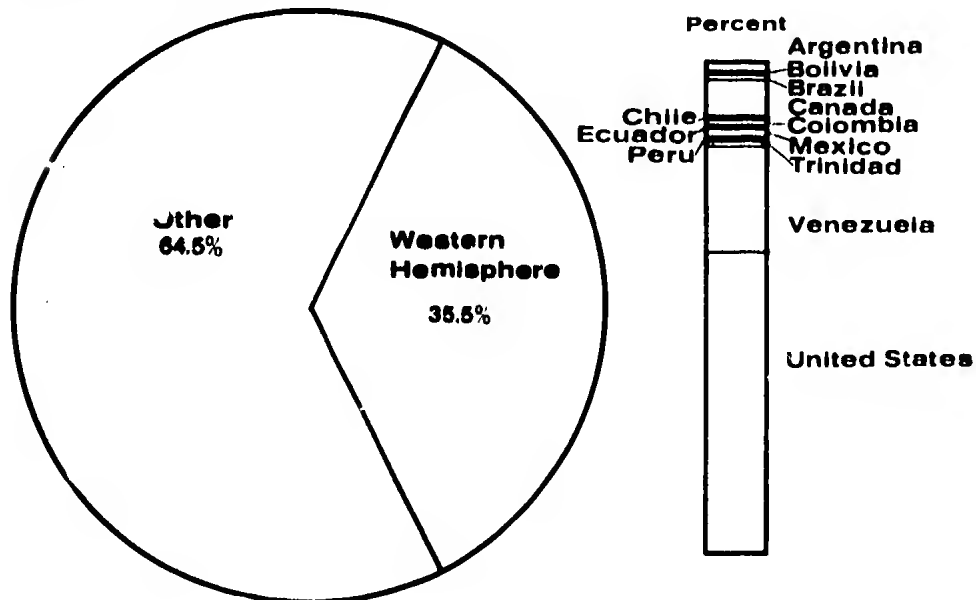
02 of 02



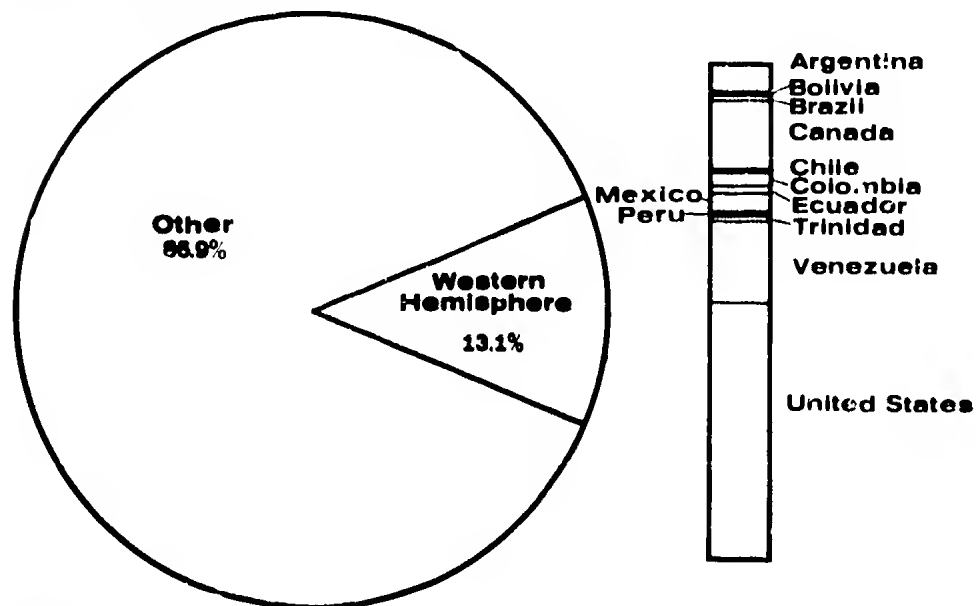
511970 9 71

## WESTERN HEMISPHERE OIL SUMMARY, 1970

### WORLD PRODUCTION



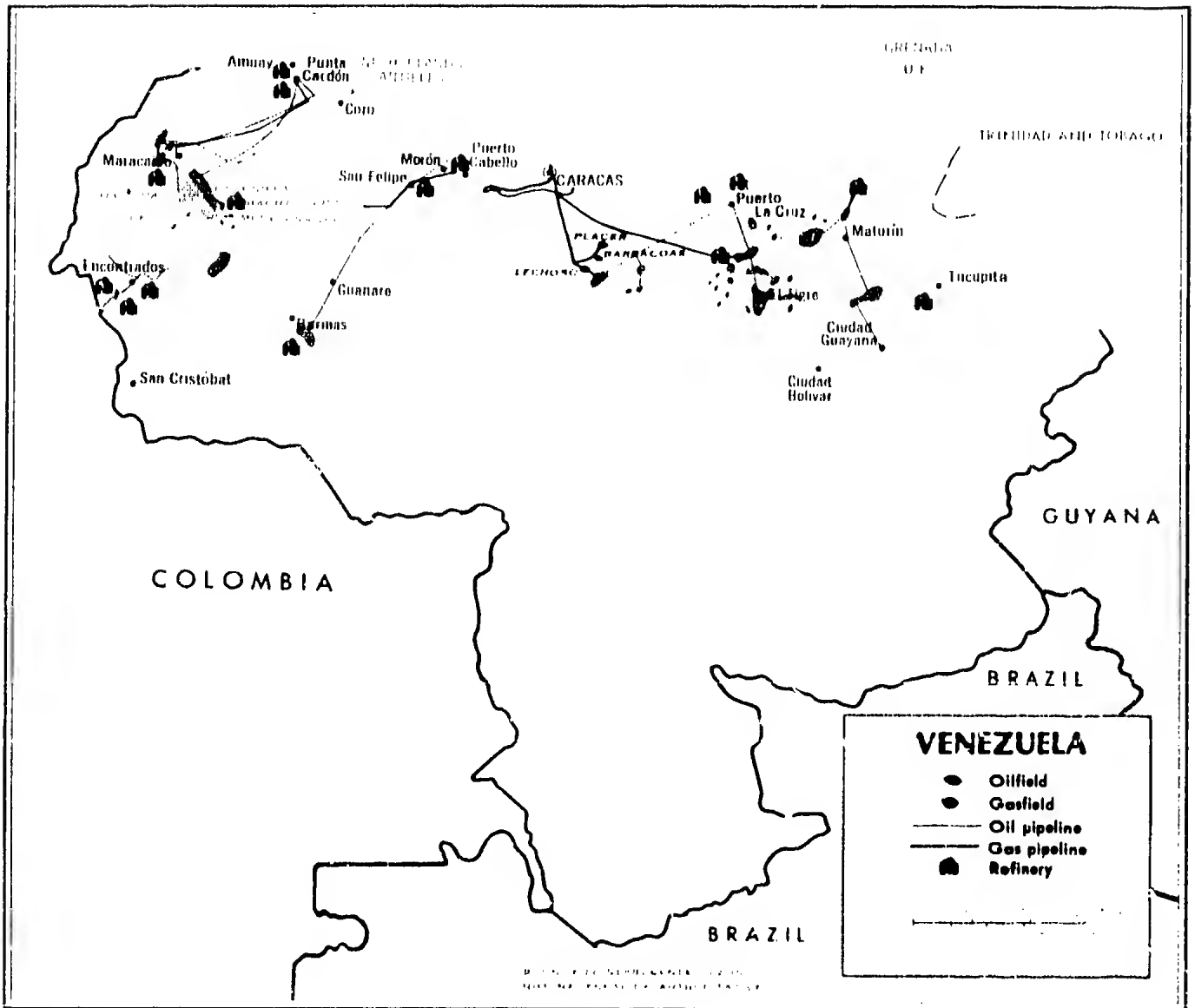
### WORLD RESERVES



511975 9-71

## Summary of Gas and Oil Production for the Western Hemisphere

	Oil Production (Thousand b/d)			Natural Gas (Billion Cu. Ft.)		
	1969	1970	1st Qtr 1971	1969	1970	1st Qtr 1971
Argentina.....	355	392	411	182.5	222.6	43.9
Bolivia.....	42	16	40	32.5	21.3	13.7
Brazil.....	167	157	170	44.1	46.7	6.0
Canada.....	1,124	1,296	1,122	2,202.4	2,620.0	768.2
Chile.....	37	35	35	263.7	365.0	38.0
Colombia.....	207	222	233	100.1	109.5	8.4
Ecuador.....	4	4	4	5.5	12.8	0.4
Mexico.....	410	436	433	602.3	659.6	154.9
Peru.....	68	72	71	51.1	65.3	0.2
Trinidad.....	157	141	140	142.4	164.3	28.6
United States.....	9,214	9,632	9,935	20,698.0	22,135.0	6,321.3
Venezuela.....	3,594	3,707	3,787	1,642.5	1,752.0	176.8
Total.....	15,379	16,101	16,681	25,967.4	28,181.0	7,563.4



511968 9 71

## VENEZUELA

### I. Introduction

Petroleum exploration in Venezuela was initiated in 1883, when several unsuccessful shallow wells were drilled south of Lake Marnenibo. There was little activity until after the turn of the century when petroleum concessions were granted to large US and British/Dutch interests. This led to a resumption of exploratory activity and to the discovery of the Mene Grande oilfield on the eastern shore of Lake Marnenibo in 1914. Soon afterward, a number of additional US companies obtained concessions, and the pace of exploration and production increased rapidly. The last concessions were granted in 1956-57; since then the government has followed a policy against granting new concessions and is now relying on service contracts to develop new production.

### II. Statistics on Operation

#### A. Crude oil:

##### 1. Production (thousand barrels per day):

1966	1967	1968	1969	1970
3,371.1	3,542.1	3,604.8	3,594.1	3,707.0*

Percent of world total: 8.2% (1970)

##### 2. Reserves:

14.0 billion barrels (1970)

Percent of world total: 2.3% (1970)

##### 3. Refinery capacity (thousand barrels per stream day):

1,313.4 (1970)

#### B. Natural gas:

##### 1. Production (billion cubic feet):

1,752 (1970)

##### 2. Reserves:

25.4 trillion cubic feet (1970)

#### C. Employment in petroleum sector (1970):

Venezuelans.....	22,733
Foreigners.....	1,121

Total..... 23,854

### III. Financial Data

#### A. Oil revenues:

\$1,370 million (1970)\*

Percent of total government revenue: 65% (1970)

#### B. Local expenditures of foreign oil companies:

N.A.

\*Provisional.

**IV. Trade****A. Exports:****1. Crude petroleum (million barrels):**

1968	1969	1970
------	------	------

898.5	903.7	888.7*
-------	-------	--------

**2. Refined products (million barrels):**

Product	1967	1968	1969	1970*
---------	------	------	------	-------

Gasoline.....	22.6	28.8	26.9	33.8
Kerosine.....	0.7	0.3	0.1	0.1
Distillate fuel oil.....	44.9	40.3	32.5	39.0
Residual fuel oil.....	239.3	233.7	252.3	272.2
Other.....	32.7	31.2	29.4	32.6

<i>Total.....</i>	<i>340.2</i>	<i>334.3</i>	<i>341.2</i>	<i>377.7</i>
-------------------	--------------	--------------	--------------	--------------

**3. Natural gas:**

No exports but does export small amounts of natural gas liquids.

**B. Imports:****1. Crude petroleum:**

1968	1969	1970
------	------	------

0	0	0
---	---	---

**2. Refined products (thousand barrels):**

Product	1968	1969	1970
---------	------	------	------

Aviation gasoline.....	<i>Insig.</i>	<i>N.A.</i>	<i>N.A.</i>
Lubricants.....	43	<i>N.A.</i>	<i>N.A.</i>
Asphalt and other.....	40	<i>N.A.</i>	<i>N.A.</i>

<i>Total.....</i>	<i>83</i>	<i>N.A.</i>	<i>N.A.</i>
-------------------	-----------	-------------	-------------

**3. Natural gas:**

1968	1969	1970
------	------	------

0	0	0
---	---	---

**C. Domestic consumption, including bunkering and the petroleum industry consumption (thousand barrels):**

1968	1969	1970
------	------	------

70,888	70,203	73,819
--------	--------	--------

\*Provisional.



**V. Oil and Gas Fields and Related Installations****A. Oilfields:**

129 producing fields in 1969

Name	Concessionaire	Date discovered	Cumulative production through 1969 (million barrels)
Five leading fields:			
Lagunillas.....	Creole Petroleum, Mene Grande Oil Co., Shell Oil Co.	1926	7, 059. 6
Bachaquero....	Continental Oil, Creole Petroleum, Mene Grande Oil Co., Shell Oil Co.	1930	5, 372. 3
Lama.....	Creole Petroleum, Shell Oil Co., Sun Oil Co.	1957	1, 301. 8
Tin Juana.....	Creole Petroleum, Shell Oil Co., Mene Grande Oil Co.	1928	2, 337. 7
Centro.....	Creole Petroleum, Phillips Petroleum, Signal Oil and Gas, Shell Oil Co.	1957	N.A.

**B. Gasfields:**

Three producing fields in 1968:

Name	Concessionaire	Date discovered	Cumulative production
Barbacons.....	Atlantic Refining Co.....	1950	N.A.
Lechoso.....	.....do.....	1954	N.A.
Placer.....	.....do.....	1948	N.A.

**C. Number of producing wells:**

1. Oil—12,128 (1970)

2. Gas—55 (1970)

## D. Principal crude oil pipelines:

From	To	Owner	Size (inches)	Length (miles)	Capacity (barrels per day)
Palmarejo de Mara.....	Puerto Caballo, Punta de Palma, Punta Cardon.	Shell Oil Co.....	20-30	154	325,000
Bachaquero.....	Lagunillas, Cabimas, Puerto Mi- randa.	....do.....	30-34	66	755,000
Casigua.....	El Calvario, La Rivera, La Solita.	....do.....	34	84	24,000
Ule.....	Amuay.....	Creole Petroleum.....	24-26	143	300,000
Do.....	....do.....	....do.....	26	143	317,000
Temblador.....	Caripito.....	....do.....	30	93	50,000
Oficina.....	Puerto La Cruz.....	Mene Grande Oil Co. ....	30	97	471,000
Travieso.....	....do.....	....do.....	16	95	175,000
Anaco.....	....do.....	....do.....	16-26	121	638,000
San Silvestre.....	El Palito.....	Mobil Oil Co.....	20	209	100,000
Anaco.....	Puerto La Cruz.....	....do.....	12-16	63	180,000
La Guasimito.....	Pamatacual.....	Mercedes Petroleum Co....	16	157	60,000
Lama.....	Altagracia.....	Texaco.....	13-24	59	125,000

## E. Principal gas pipelines

	Owner	Size (inches)	Length (miles)	Volume transported (billion cubic feet)
Campo Roblecito y Placer/Lechoso.....	Atlantic Refining.....	16	54	30
Lechoso/La Guaira.....	Atlantic Transmission Corp .....	4-16	280	12
Anaco/Puerto La Cruz.....	Eastern Venezuela Gas Transport Co..	12-16	66	16
La Paz/Cardon.....	Shell Oil Co.....	20	380	62
Anaco/Guigue.....	Venezuelan Petroleum Corp.....	4-26	521	9
Casigua/La Fria.....	....do.....	9	74	N.A.
Anaco/Puerto Ordaz.....	....do.....	N.A.	140	N.A.

## VI. Principal Companies

### Producing and operating

Standard Oil of California\*

Continental Oil\*\*

Texaco\*

Standard Oil of New Jersey\*

Gulf\*

Socony Mobil\*

Standard Oil of Indiana

Phillips Petroleum Co.\*

Signal Oil and Gas\*\*

Sinclair Oil\*

Atlantic Refining

Sun Oil\*\*

Royal-Dutch Shell\*

Venezuelan Petroleum Corp. (state-owned)\*

---

\*Scope of operations also includes refining and pipelines.

\*\*Scope of operations also includes pipelines.

## Western Hemisphere Refineries (Excluding U.S.)

Company and refinery location	Crude capacity (b/sd)	Cat-cracking capacity	Cat-reforming capacity
<b>ARGENTINA</b>			
Cia. Condor, Avellaneda.....	1,300	.....	.....
Esso, S.A., Petrolera Argentina			
Campana.....	67,000	16,800	8,900
Galvan.....	15,000	.....	.....
Lottoro y Papini, Avellaneda.....	800	.....	.....
Petroquimica, Comodoro Rivadavia.....	5,000	.....	.....
Ragor, SAIC, Quilmes.....	600	.....	.....
Refineria do Petroleo "La Isura," S.A., Bahia Blanca.....	17,100	.....	.....
Shell Compania Argentina de Petroleo, S.A., Buenos Aires.....	90,000	19,000	.....
Yacimientos Petroliferos Fiscales			
Campo Duran.....	30,000	.....	.....
Dock Sud, Buenos Aires.....	6,000	.....	.....
La Plata.....	140,000	41,000	10,000
Lujan de Cuyo.....	100,000	28,400	3,700
Plaza Huincal.....	5,000	.....	.....
San Lorenzo.....	38,000	.....	.....
<b>TOTAL.....</b>	<b>515,800</b>	<b>105,200</b>	<b>22,600</b>
Astrasur Refineries, Patagonia.....	17,090	(Under construction)	
<b>BAHAMAS</b>			
Bahamas Oil Refining Co., Freeport.....	250,000	.....	.....
<b>BARBADOS</b>			
Mobil Oil Barbados Ltd., Garrison.....	3,000	.....	.....
<b>BOLIVIA</b>			
Yacimientos Petroliferos Fiscales			
Bolivianos, Camiri.....	500	.....	.....
Cochabamba.....	7,400	.....	.....
Santa Cruz.....	1,900	.....	.....
Santandita.....	600	.....	.....
Sucre.....	1,200	.....	.....
<b>TOTAL.....</b>	<b>11,600</b>	.....	.....
<b>BRAZIL</b>			
Companhia de Petroleo da Amazonia, Manaus...	7,000	2,000	.....
Industrias Matarazzo de Energia, S.A., Sao Paulo...	1,300	.....	.....
Petroleo Brasileiro, S.A. (Petrobras)			
Belo Horizonte.....	45,000	12,000	.....
Cubatao (Sao Paulo).....	123,900	.....	12,000
Fortaleza (Ceara).....	2,000	.....	.....
Mataripe (Bahia).....	70,000	12,000	.....
Porto Alegre.....	45,000	12,000	.....
Rio de Janeiro (Duque de Caxias).....	163,000	31,800	11,900
Refinaria de Petroleos de Manguinhos, S.A., Rio de Janeiro.....	10,000	.....	.....
Refinaria de Petroleo Ipiranga, S.A., Rio Grande..	9,300	.....	.....
Refinaria e Exploracao de Petroleo (UNIAO), S.A., Sao Paulo.....	31,000	25,000	.....
<b>TOTAL.....</b>	<b>507,500</b>	<b>94,800</b>	<b>23,900</b>
Petroleo Brasileiro, S.A. (Petrobras), Paulinia (Sao Paulo).....	150,000	(Under construction)	

## Western Hemisphere Refineries (Excluding U.S.) (Continued)

Company and refinery location	Crude capacity (b/sd)	Cat-cracking capacity	Cat-reforming capacity
BRITISH WEST INDIES			
West Indies Oil Co. Ltd., St. Johns, Antigua.....	11,000	.....	1,800
CANADA			
Alberta			
Great Canadian Oil Sands Ltd., Fort McMurray..	65,000	.....	.....
Gulf Oil Canada Ltd.			
Calgary.....	19,000	.....	3,000
Edmonton.....	14,000	3,000	5,400
Husky Oil Canada Ltd., Lloydminster.....	7,000	.....	1,000
Imperial Oil Ltd.			
Calgary.....	19,200	18,600	2,500
Edmonton.....	41,500	19,400	2,600
Mohawk Oil Ltd., Edmonton.....	10,000	.....	.....
Shell Canada Ltd., Bowden.....	5,200	.....	2,200
Texaco Canada Ltd., Edmonton.....	18,700	7,500	3,000
TOTAL.....	190,600	48,500	19,700
Gulf Oil Canada Ltd., Edmonton.....	80,000	(Under construction)	
British Columbia			
Chevron Canada Ltd., North Burnaby (Vancouver).....	20,900	9,000	3,400
Gulf Oil Canada Ltd.			
Kamloops.....	6,500	3,100	1,000
Port Moody.....	20,000	13,500	4,000
Imperial Oil Ltd., Ioco.....	34,300	17,100	5,000
Pacific Petroleum Ltd., Taylor Flats.....	10,000	5,300	2,400
Shell Canada Ltd., Burnaby (Vancouver).....	20,300	6,400	2,800
Union Oil Co. of Canada, Ltd., Prince George....	8,000	.....	1,500
TOTAL.....	120,000	54,400	20,100
Manitoba			
Imperial Oil Ltd., Winnipeg.....	21,800	8,600	2,800
Shell Canada Ltd., St. Boniface.....	27,000	11,900	3,600
TOTAL.....	48,800	20,500	6,400
New Brunswick			
Irving Refining Ltd., St. Johns.....	47,500	18,200	7,000
Newfoundland			
Golden Eagle Refining Co. of Canada, Ltd., Holyrood.....	12,000	.....	1,300
Newfoundland Refining Co. Ltd., Come By Chance.....	100,000	(Planned)	
Northwest Territories			
Imperial Oil Ltd., Norman Wells.....	2,800	.....	.....
Nova Scotia			
Imperial Oil Ltd., Dartmouth (Halifax).....	63,500	35,900	6,200
Texaco Canada Ltd., Eastern Passage.....	14,000	7,000	2,100
Gulf Oil Canada Ltd., Point Tupper.....	65,000	.....	12,000
TOTAL.....	142,500	42,900	20,300

## Western Hemisphere Refineries (Excluding U.S.) (Continued)

Company and refinery location	Crude capacity (b/sd)	Cat-cracking capacity	Cat-reforming capacity
<b>Ontario</b>			
BP Refinery Canada Ltd., Oakville.....	35,000	21,000	4,800
Gulf Oil Canada Ltd., Clarkson.....	61,000	29,700	10,000
Imperial Oil Ltd., Sarnia.....	127,500	45,100	34,200
Regent Refining (Canada) Ltd., Port Credit....	38,500	17,500	4,700
Shell Canada Ltd.			
Corunna.....	52,000	19,600	9,500
Oakville.....	41,600	17,000	6,150
Sun Oil Co., Ltd., Sarnia.....	33,300	16,000	12,600
<b>TOTAL.....</b>	<b>388,900</b>	<b>165,900</b>	<b>81,950</b>
Great Lakes Asphalt Co., Mississauga.....	10,000	(Planned)	
Texaco Canada Ltd., Walpole.....	50,000	(Planned)	
<b>Quebec</b>			
BP Refinery Canada Ltd., Montreal.....	75,600	23,100	12,000
Gulf Oil Canada Ltd., Montreal East.....	75,000	25,000	13,000
Golden Eagle Canada, St. Romuald.....	100,000	.....	12,000
Imperial Oil Ltd., Montreal East.....	96,800	28,900	10,800
Petrofina Canada, Pointe-aux-Trembles.....	55,000	25,000	12,000
Shell Canada Ltd., Montreal East.....	104,000	39,500	13,500
Texaco Canada Ltd., Montreal East.....	63,400	28,000	11,000
<b>TOTAL.....</b>	<b>569,200</b>	<b>169,500</b>	<b>84,300</b>
Quebec Oil Refinery Ltd., Pointe-aux-Trembles..	50,000	(Planned)	
<b>Saskatchewan</b>			
Consumers' Co-Operative Refineries Ltd., Regina.	22,500	18,000	3,000
Gulf Oil Canada Ltd.			
Moose Jaw.....	15,000	8,100	5,400
Saskatoon.....	8,300	4,700	.....
Husky Oil Canada Ltd., Moose Jaw.....	4,000	.....	.....
Imperial Oil Ltd., Regina.....	31,200	19,400	2,700
Northern Petroleum Corp. (1967) Ltd., Kamsack..	1,200	.....	.....
<b>TOTAL.....</b>	<b>82,200</b>	<b>50,200</b>	<b>11,100</b>
<b>TOTAL CANADA.....</b>	<b>1,604,500</b>	<b>570,100</b>	<b>252,150</b>
<b>CHILE</b>			
Empresa Nacional de Petroleo			
Concon.....	55,000	12,000	6,000
Concepcion.....	60,000	12,000	4,000
<b>TOTAL.....</b>	<b>115,000</b>	<b>24,000</b>	<b>10,000</b>
<b>COLOMBIA</b>			
Colombian Petroleum Co., Tibu.....	4,200	.....	.....
Ecopetrol, near Cali.....	70,000	.....	.....
Empresa Colombiana de Petroleos, Barrancabermeja.....	76,000	33,000	.....
International Petroleum (Colombian) Ltd.			
Cartagena.....	50,000	25,000	.....
La Dorada.....	5,200	.....	.....
Texas Petroleum Co., Guano.....	2,000	.....	.....
Texaco, Putamayo.....	1,000	.....	.....
<b>TOTAL.....</b>	<b>208,400</b>	<b>58,000</b>	.....
Empresa Colombiana de Petroleos, Iumaco.....	40,000	(Proposed)	

## Western Hemisphere Refineries (Excluding U.S.) (Continued)

Company and refinery location	Crude capacity (b/d)	Cat-cracking capacity	Cat-reforming capacity
<b>COSTA RICA</b>			
Refinadora Costarricense de Petroleo, Puerto Limon.....	8,000	.....	1,200
<b>CUBA†</b>			
Cia. Petrolera Shell de Cuba, Havana.....	27,063	.....	5,000
Esso Standard Oil Co., Havana.....	46,000	24,000	7,000
The Texas Co. (West Indies) Ltd., Santiago de Cuba.....	20,000	.....	3,000
<b>TOTAL.....</b>	<b>93,000</b>	<b>24,000</b>	<b>15,000</b>
<b>DOMINICAN REPUBLIC</b>			
Shell International Petroleum Corp., Santo Domingo.....	30,000	(Under construction)	
<b>ECUADOR</b>			
Anglo-Ecuadorian Oilfields Ltd., La Libertad....	27,500	.....	.....
Petroleos Gulf del Ecuador, La Libertad.....	5,500	.....	1,000
<b>TOTAL.....</b>	<b>33,000</b>	.....	<b>1,000</b>
<b>EL SALVADOR</b>			
Refineria Petrolera Acajutla, S.A., Acajutla.....	14,000	.....	2,600
<b>GUATEMALA</b>			
Refinaria Petrolera de Guatemala-California, Inc., Matias de Galvez.....	12,000	.....	3,000
Texas Petroleum Co., Escuintla.....	8,500	.....	3,000
<b>TOTAL.....</b>	<b>20,500</b>	.....	<b>6,000</b>
<b>HONDURAS</b>			
Texaco, Puerto Cortes.....	10,000	.....	1,600
<b>JAMAICA</b>			
Esso West Indies Ltd., Kingston.....	32,000	.....	3,100
<b>MARTINIQUE</b>			
Ste. Anonyme de la Raffinerie des Antilles, Fort de France.....	12,000	.....	.....
<b>MEXICO</b>			
Petroleos Mexicanos			
Atzacapotzalco.....	90,000	23,000	.....
Salamanca, Guanajuato.....	75,000	.....	8,300
Ciudad Madero, Tamaulipas.....	169,000	23,000	19,000
Minatitlan.....	138,500	24,000	29,300
Poza Rica de Hidalgo.....	13,000	.....	.....
Reynosa, Tamps.....	9,000	.....	.....
<b>TOTAL.....</b>	<b>494,500</b>	<b>70,000</b>	<b>56,600</b>
<b>NETHERLANDS ANTILLES W.I.</b>			
Lago Oil & Transport Co., Aruba.....	460,000	45,000	.....
Shell Curacao, Curacao.....	380,000	40,000	16,000
<b>TOTAL.....</b>	<b>840,000</b>	<b>85,000</b>	<b>16,000</b>
<b>NICARAGUA</b>			
Esso Standard Oil, S.A., Managua.....	21,800	.....	4,400

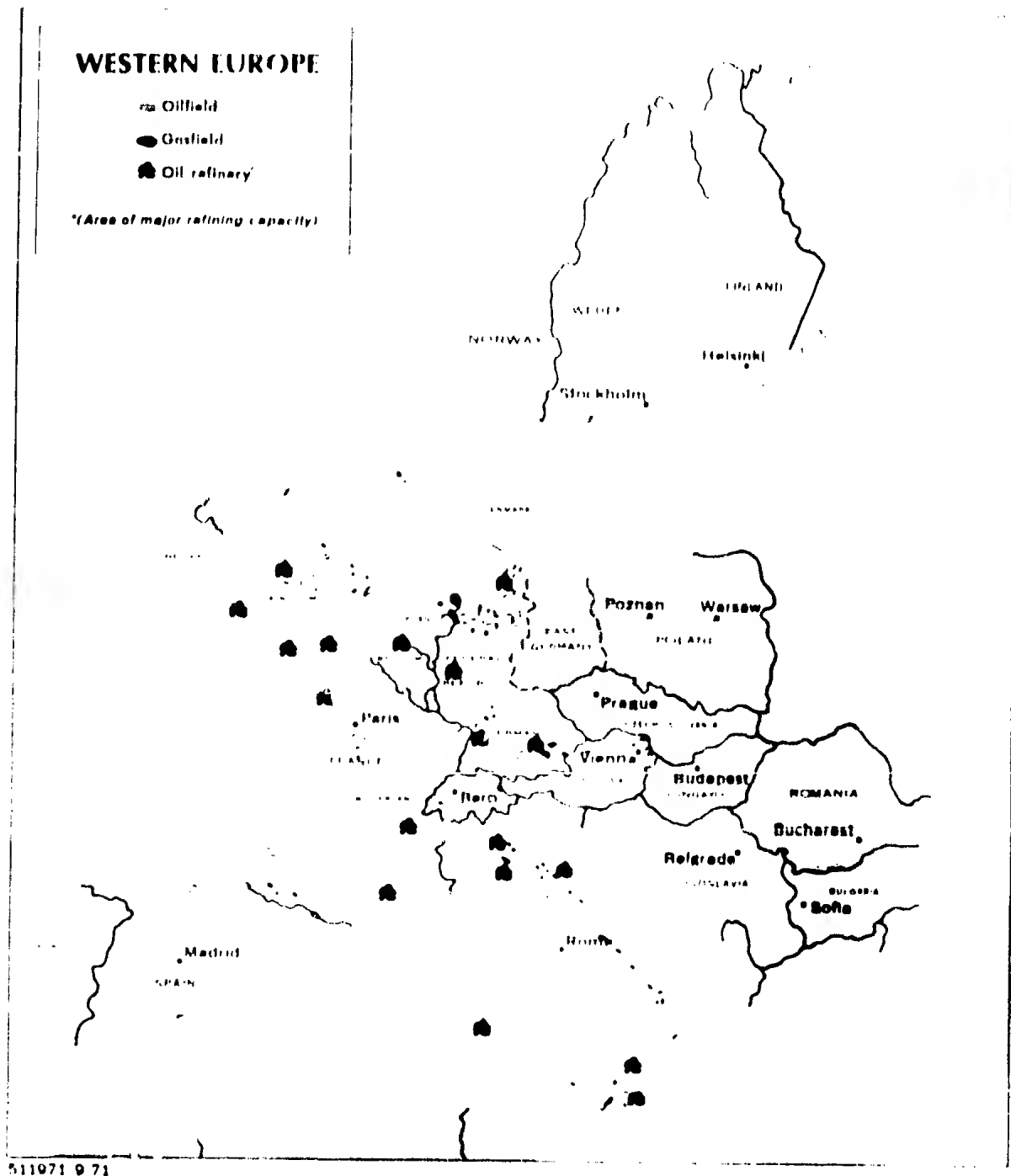
†All privately owned companies seized by government and now operated by Empresa Consolidada de Petroleo, S.A.

## Western Hemisphere Refineries (Excluding U.S.) (Continued)

Company and refinery location	Crude capacity (b/d)	Cat-cracking capacity	Cat-reforming capacity
PANAMA			
Refineria Panama S.A., Las Minas Bay.....	78,000	.....	8,000
PARAGUAY			
Refineria Paraguaya S.A., Asuncion.....	5,000	.....	.....
PERU			
Cia. de Petroleo Ganzo Azul Ltd., Pucallpa.....	2,500	.....	.....
Empresa Petrolera Fiscal			
Iquitos.....	1,100	.....	.....
La Pampilla.....	40,000	6,700	1,800
Talara.....	60,000	.....	.....
Refineria Conchan-California S.A., Conchan.....	10,000	.....	.....
TOTAL.....	113,600	6,700	1,800
PUERTO RICO			
Caribbean Gulf Refining Corp., Bayamon.....	40,000	8,500	6,000
Commonwealth Oil Refg. Co., Guayanilla.....	115,000	38,000	7,500
TOTAL.....	155,000	46,500	13,500
Sun Oil Co , Yabucoa.....	66,500	(Under construction)	
TRINIDAD			
Shell Trinidad Ltd., Point Fortin.....	74,000	.....	7,500
Texaco Trinidad Inc.			
Point-a-Pierre.....	350,000	26,500	25,000
Brighton.....	6,000	.....	.....
TOTAL.....	430,900	26,500	32,000
URUGUAY			
Administracion Nacional de Combustibles Alcohol y Portland, Montevideo, Teja.....	40,000	5,000	3,000
VENEZUELA			
Chevron Oil de Venezuela, Bajo Grande.....	61,500	.....	.....
Cia. Shell de Venezuela Ltd.			
Cardón.....	350,000	15,000	.....
San Lorenzo.....	38,000	.....	.....
Creole Petroleum Corp.			
Amuay.....	465,000	.....	13,500
Caripito.....	74,200	.....	.....
Corporación Venezolano del Petróleo, Morón.....	18,000	500	1,750
Mobil Oil Co. de Venezuela, El Palito.....	90,000	.....	7,000
Phillips Petroleum Co., San Roque.....	4,300	.....	.....
Sinclair Oil & Refining Co., Barinas.....	5,400	.....	.....
Sinclair Venezuelan Oil Co., Puerto La Cruz.....	38,000	.....	.....
Texas Pet. Co., Tucupita.....	10,000	.....	.....
Venezuela Gulf Ref. Co., Puerto La Cruz.....	159,000	15,000	.....
TOTAL.....	1,313,400	50,500	22,250
Venezolano del Petroleo, El Tablazo.....	100,000	(Planned)	
VIRGIN ISLANDS			
Amerada Hess Corp., St. Croix.....	250,000	.....	6,000

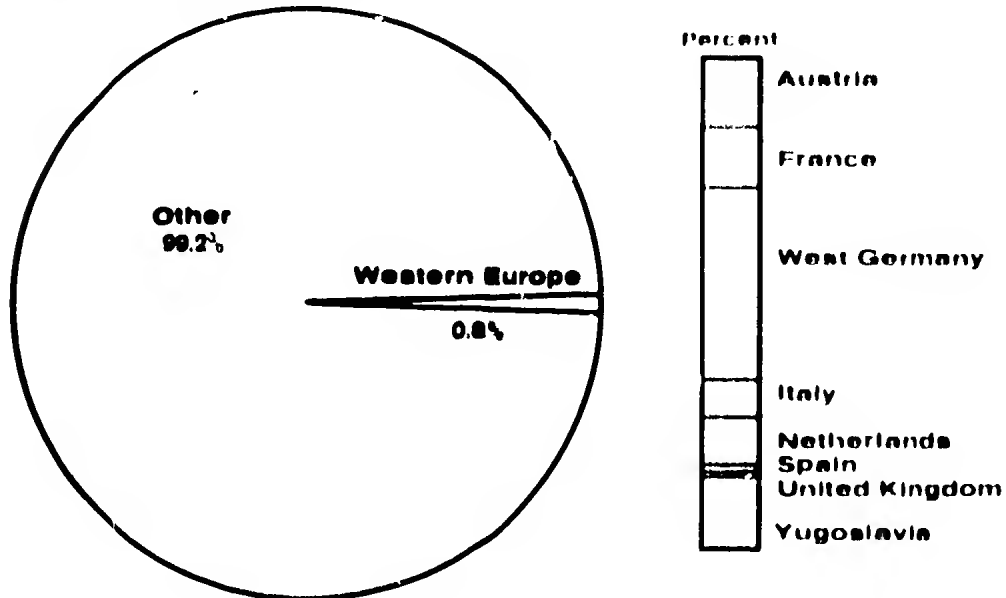


## WESTERN EUROPE

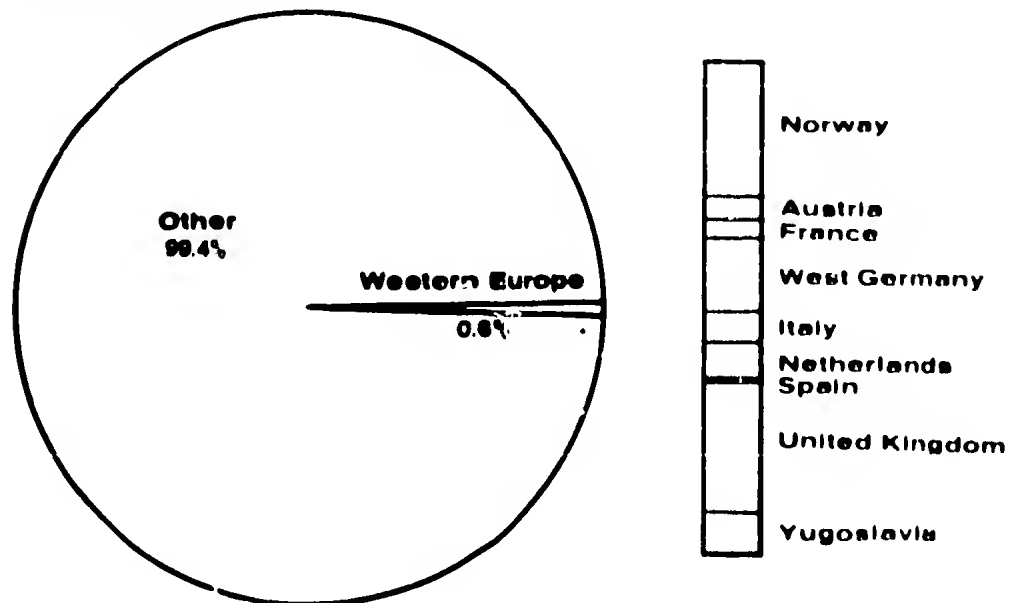


## WESTERN EUROPE OIL SUMMARY , 1970

### WORLD PRODUCTION



### WORLD RESERVES



511974 9 71

## Summary of Gas and Oil Production for Western Europe

	Oil Production (Thousand b/d)			Natural Gas (Billion Cu Ft)		
	1969	1970	1st Qtr 1971	1969	1970	1st Qtr 1971
Austria	53	53	52	52.4	65.6	22.6
France	50	46	45	241.9	270.1	70.0
West Germany	154	147	145	314.6	407.4	144.9
Italy	28	27	24	432.2	411.9	118.1
Netherlands	30	37	34	892.1	1,276.1	558.9
Spain	4	4	3			
United Kingdom	2	2	2	168.8	384.4	168.8
Yugoslavia	55	58	60	26.1	35.1	13.7
Total	385	374	365	2,108.1	2,879.6	1,096.4

## Western Europe Refineries

Company and refinery location	Crude capacity (b/yr)	Cat cracking capacity	Cat reforming capacity
AUSTRIA			
Mobil Oil Austria A.G., Vienna	4,500		
Osterreichische Mineraloelverwaltung A.G., Schwechat	145,000	16,000	9,000
Shell Austria A.G., Floridsdorf	4,800		
TOTAL	154,300	16,000	9,000
Erbohr Raffinerie, Lannock	40,000	(Under construction)	
BELGIUM			
Albatrios, S.A. - Belge pour le Raffinage de Petrole, Antwerp	60,000		9,500
Belgian Shell Co., S.A., Ghent	8,000		
Esso Belgium S.A., Antwerp	99,750	9,500	7,500
International Oil Co., Antwerp-Kiel	20,000	3,000	2,500
Raffinerie Belge des Petroles, S.A., Antwerp	85,000		18,000
Ste. Industrielle Belge des Petroles, Antwerp	100,000	46,000	27,000
Texaco Belgium, Ghent	100,000		17,500
TOTAL	673,350	59,100	82,500
Wintershall A.G., Antwerp	60,000	(Planned)	
DENMARK			
A/S Shell Raffinaderiet, Fredericia	50,300		10,000
Dansk Olie, Koldingborg	60,000		7,000
Gulf Oil Refining, Slagelse, Zealand	80,000		15,800
TOTAL	190,300		32,800
FINLAND			
Neste Oy Corp.			
Naantali	61,000	13,000	6,800
Purvis	112,500	10,000	25,500
TOTAL	173,500	23,000	32,300
FRANCE			
Antar Petroles, Valenciennes (Nord)	78,000		14,000
Antar Petroles de l'Alsace			
Douglas	100,000	12,500	17,000
Vern	1,000		7,500
Compagnie de la Raffinerie d'Ille de France, Grandpuits	75,000		11,000
Cie. Francaise de Raffinage			
Gouffreville	325,000	27,600	62,000
La Mothe	232,000	15,100	45,000
Cie. de Raffinage Shell-Berre			
Berre l'Etang	173,250	17,000	15,000
Paulliac	80,000	38,000	12,000
Petit Couronne	189,000		16,000
Cie. Rhonane de Raffinage, Reichstett	80,000		18,000
ELF Rhone-Alpes, Feyzin	131,000	13,000	10,500
ELF Union, Gargenville	70,000		4,800
Esso Standard S.A.			
Port Jerome	150,000	10,000	12,000
Bordeaux	56,000		7,200
Fur-sur-Mer	60,000	11,500	9,200
Mobil Oil Francaise			
Gravenchon	78,300		15,000
Frontignan	83,000	12,000	5,500

## Western Europe Refineries (Continued)

Company and Refinery Location	Crude capacity (bbls)	Crack. capacity	Crack. reforming capacity
FRANCE (Continued)			
Stc. Financiere des Petroles BP			
Dunkirk	110,000		15,000
Lavera	105,000		5,000
Vernon	90,000		12,500
Stc. de la Raffinerie de Lorraine-Hammoncourt	90,000		15,000
Stc. Raffinerie de Strasbourg-Strasbourg	55,000		25,000
Union Industrielle (I.I.I.), Ambles	40,000	7,400	2,500
TOTAL	2,557,550	164,400	654,000
CEB (Stc. Financiere des Petroles BP) and I.I.I.			
Union, Brest	60,000	Planned	
IRELAND			
Irish Refining Co., Ltd., Whitegate	55,000		14,500
ITALY			
AGIP, Mineraria S.P.A. Cortemaggiore	3,000	2,300	
Amoco Italia S.P.A. Cremona	100,000		10,000
ARIC S.P.A.			
Cala Chiavari	75,000	20,000	12,000
San Nazario (Pavia)	100,000	20,000	21,000
Avonina Petroli Italiani, L'Abruzzo	75,000		2,000
Aquila S.P.A. Trieste	62,000	5,000	5,700
Asfalti Italiani Cementi Derivate S.A. Ragusa	5,000		7,000
BP Italiano S.P.A. Volpiano	80,000		12,500
Dellepiane Raffaffa, Genova	1,700		500
Eni Italiana S.P.A.			
Genoa	20,000	2,000	2,000
Milan	8,500		
Garrone, L'Espresso, Genova	100,000		14,400
Industria Chimica Italiana del Petrolio, Mantova	82,000		10,000
Industria Leganti Stradali del Affini, Como	5,000		1,500
Industria Raffinazione Oli Minerali, Port Marghera	60,000		12,000
Industria Petroli e Lavastone Oli Minerali, Rosalia, Genova	33,000		1,500
Lombardi Petroli, Adriasanta, Milano	26,000		3,000
Mediterranean S.P.A. Molveno (Trento)	110,000	40,000	10,000
Montecatini Petroli S.P.A. Brindisi	35,000		
Nuova Raffineria N.I.O. Milano	12,000		1,000
Model Oil Italiana, Naples	143,000	15,000	13,000
Raffineria Monte, Civita	42,000		12,500
Raffineria di Roma S.P.A. Rome	85,000		11,000
Raffineria Oli Esportanti, Aguzzola	1,500		
Raffineria Isola, SARAS, Cagliari (Sardinia)	270,000	30,000	19,500
Raffineria Sardinia Oil, Monreale, Augusta (Sardinia)	312,000	27,000	16,000
Sanquiro, Industria Petroli, Genova	18,000		1,500
Stc. Sardinia, Porto Sures (Sardinia)	120,000		
Shell Italiana			
SPA, La Spezia	100,000		11,000
Ilio	84,000	15,000	18,500
Taranto	89,200		17,000
Soc. Industriale Catone e Priolo	180,000	20,000	10,000
Societa Azionaria Raffinazione Oli Minerali, Ravenna	268,000		14,000
Statoil Industria Petroli			
Bari	74,000		11,000
Leghorn (Livorno)	84,000		13,600

## Western Europe Refineries (Continued)

Company and refinery location	Crude capacity (bpd)	Crack. capacity	Cat. reforming capacity
ITALY (Continued)			
Stalper, Ancona Raffineria Italiana, Olei Minerali Novara	152,000	13,200	29,600
Rio Petroli d'Italia			
Fornovo (Parma)	20,000		
Arcola (Livorno)	20,000		1,400
TOTAL	3,159,500	209,500	111,600
ANIC, Civitavecchia	50,000	(Planned)	
Lipigas, Sideri	50,000	(Under construction)	
Raffineria Petroli di Leonardo Garzanti, SPA, Novi Ligure	110,000	(Planned)	
NETHERLANDS			
BP Raffinaderij Nederland, Oostvliet	600,000		22,000
Chevron, Petroleum Mij. (Netherlands), N.V., Pernis	261,000		39,000
Esso Nederland, Rotterdam	351,750		50,000
Gulf Oil Raffinaderij N.V., Rosenburg	80,000		7,000
Mobalol N.V., Amsterdam	80,000		20,600
N.V. Snel & H. Blyden, Amsterdam	6,400		
Shell Nederland, Pernis	525,000	75,000	11,000
TOTAL	1,604,150	75,000	172,000
Shell Nederland and Dutch State Mines, Geleen	75,000	(Planned)	
Total Nederland, Rotterdam	80,000	(Planned)	
NORWAY			
Norske Esso, A.S.			
Tonsberg Slagen	70,000		10,000
Tonsberg Valla	1,000		
Norske Shell, Bravika (Sola)	50,000		10,500
TOTAL	121,000		20,500
PORTUGAL			
S.A. C.R. S.A.			
Lisbon, Cabo Ruy	17,000	11,000	
Oporto	15,000		10,000
TOTAL	32,000	11,000	10,000
SPAIN			
Asfaltos Espanoles, S.A., Tarragona	15,000		
Cia. Espanola de Petroleos, Algeciras Bay	90,000		20,500
Santa Cruz de Tenerife, Canary Islands	160,000		20,000
Cia. Iberica Refinadora de Petroleos, S.A., La Coruna	100,000		
Empresa Nacional Calvo Sotelo de Combustibles, Liquidos y Lubricantes, S.A., Puertollano	80,000		6,800
Esso Petroleos Espanoles, S.A., Castellon de la Plana	88,000		7,000
Refineria de Petroleos de Escambreras, S.A., Escambreras	118,000		13,000
Rio Gulf de Petroleos, Huelva	81,000		5,000
TOTAL	705,000		72,300
Government, Tarragona	100,000	(Planned)	
Petronor, Bilbao	120,000	(Under construction)	

## Western Europe Refineries (Continued)

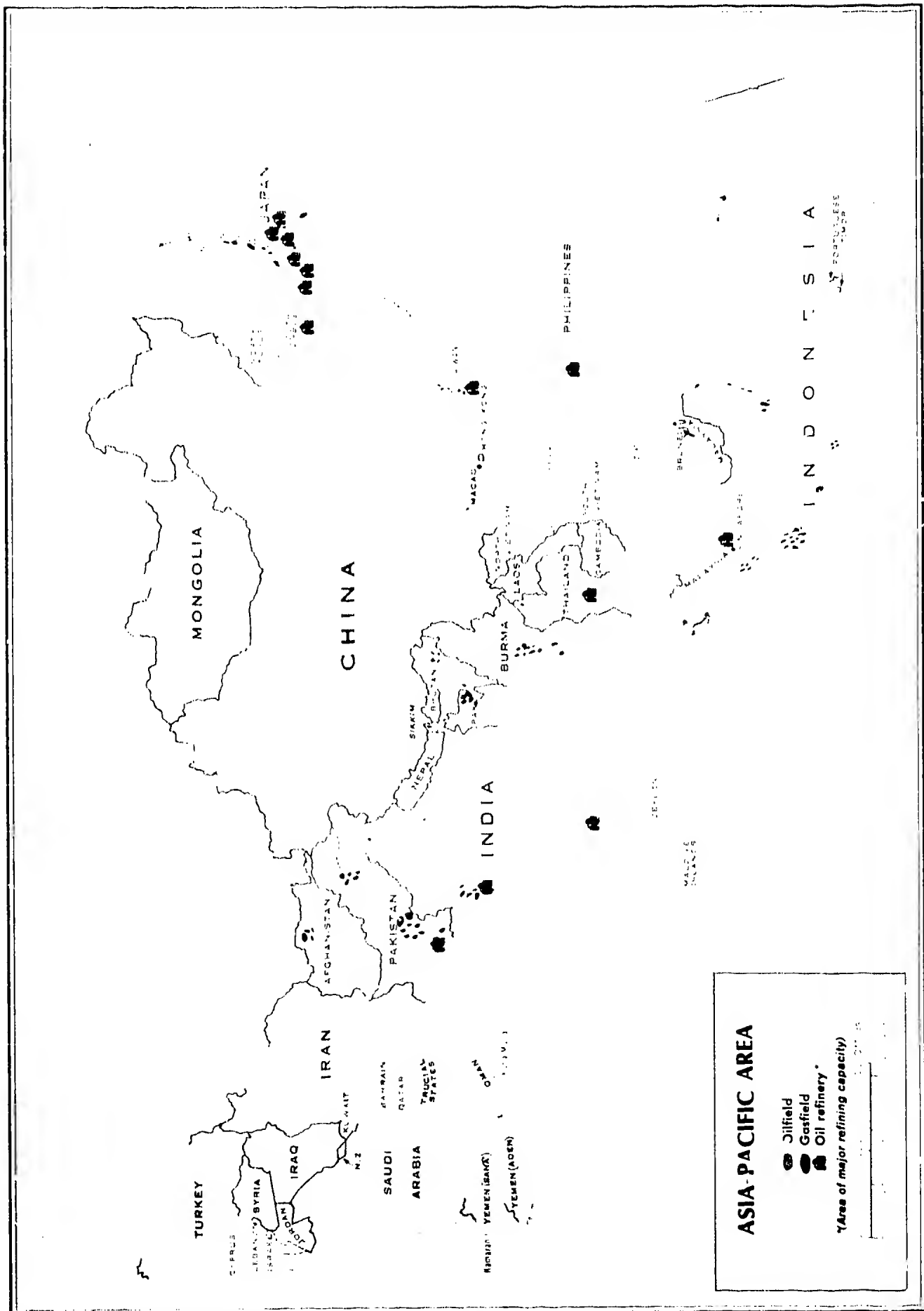
Company and refinery location	Crude capacity (b/d)	Cracking capacity	Crude refining capacity
SWEDEN			
AB Nova Petroleum			
Nynashamn	30,000		7,000
Malmö	4,000		
Gothenburg	6,000		
LP Raffinaderi, Gothenburg	100,000		24,500
Koppartrans Olje AB (Shell), Gothenburg	94,500		15,000
TOTAL	234,500		46,500
Swedish Cooperative Oil Consumers Association, Lysekil	100,000	(Under construction)	
SWITZERLAND			
Raffinerie Du Sud-Ouest S.A., Collombey	115,000		18,200
Raffinerie de Creaser, S.A., Neuchâtel	57,750		10,000
TOTAL	172,750		28,200
Raffinerie Rheintal (F.N.D.), Schwald	34,000	(Planned)	
WEST GERMANY			
BP Benzol und Petroleum AG			
Duisburg	100,100	10,000	10,000
Hamburg-Finkenwerder	91,200		5,700
Vohburg, Bayern	93,300	10,000	15,500
Caltec Deutschland GmbH, Rumsheim (near Frankfurt)	95,500	10,200	3,600
Deutsche Erdöl AG, Heide	63,600	9,100	28,400
Deutsche Marathon Petroleum GmbH, Bughausen	42,400		
Deutsche Shell AG			
Gudorf	184,900		29,600
Harburg-Grasbrook	95,800	11,800	10,000
Ingolstadt	66,800		7,400
München	8,900		
Elf Mineralöl GmbH, Speyer	46,700		
Erdölraffinerie Ingolstadt AG, Ingolstadt	67,290		11,700
Eröl-Raffinerie Mannheim GmbH, Mannheim	70,400		5,300
Erdöl-Raffinerie Neustadt GmbH, Neustadt	74,200		15,900
Erdölwerke Frisia AG, Emden	50,900		9,000
Esso AG			
Cologne	114,450		8,800
Hamburg-Harburg	73,500	11,000	8,500
Ingolstadt	108,450		15,200
Karlsruhe	181,650		32,100
Finis Bitumenwerke GmbH, Mulheim	10,600		
Finis Raffinerie AG, Dinsberg-Neuenkamp	42,400		7,000
Gelsenberg-Benzin AG, Gelsenkirchen-Herse	148,500	13,200	29,000
Gewerkschaft Erdöl-Raffinerie, Deuring-Nerag, Misdorf	51,000		6,400
Gewerkschaft Erdöl-Raffinerie Emsland, Lingen-Holthausen	70,500	18,200	6,900
Klbenholz Mineralöl GmbH, Essen-Altenessen	15,900		
Mineralöl-und Asphaltwerke AG, Ostermeyer	11,700		
Mineralölwerke Peine, Peine	400		



## Western Europe Refineries (Continued)

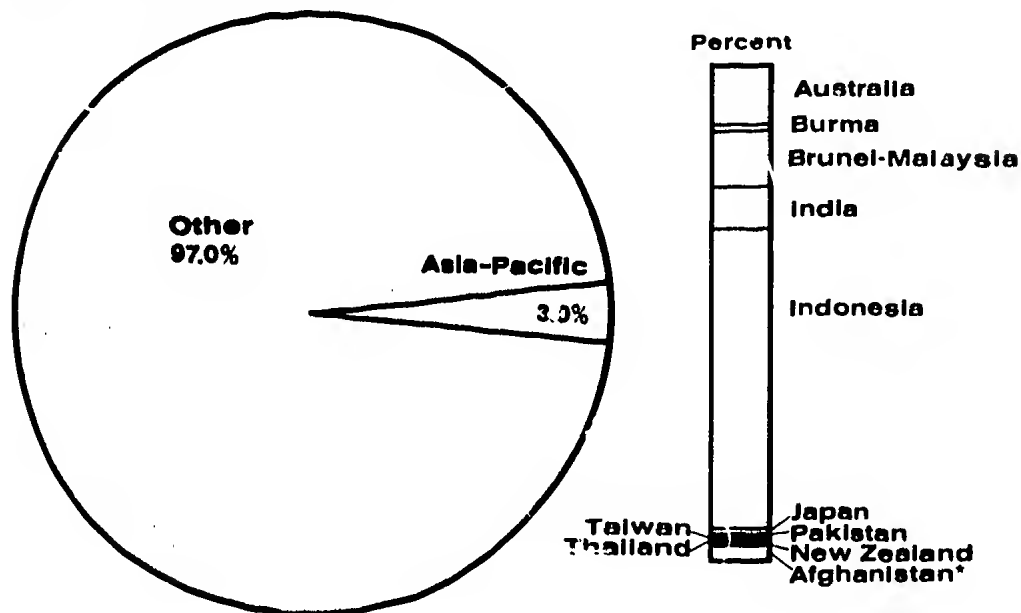
Company and refinery location	Crude capacity (b/d)	Cat cracking capacity	Cat-reforming capacity
WEST GERMANY (Continued)			
Mobil Oil AG in Deutschland			
Bremen Odelebenstrasse	31,200	3,700	5,000
Wuerth	74,000	12,500	34,500
Oberrheinische Mineralolwerke GmbH, Karlsruhe	132,600		19,300
Olwerke Julius Schindler GmbH, Hanberg			
Neuhof	7,200		
Saarland Raffinerie, Klarenthal	50,000		
Union Rheinische Braunkohlen Kraftstoff AG, Wesseling	101,800		6,400
Veba-Chemie AG, Gelsenkirchen Huer	80,100	5,500	9,100
Wintershall AG, Salzbergen	7,100		
TOTAL	2,491,450	124,000	321,300
YUGOSLAVIA			
Industriji Nafta (INA)			
Lendava	4,000		
Rijeka	102,000		4,000
Slank	64,000	2,000	3,500
Rafinerija Nafta			
Bosanski Brod	50,000		7,500
Novi Sad	12,000		
Pancevo	26,000		3,000
TOTAL	188,000	2,000	18,000

ASIA-PACIFIC  
AREA

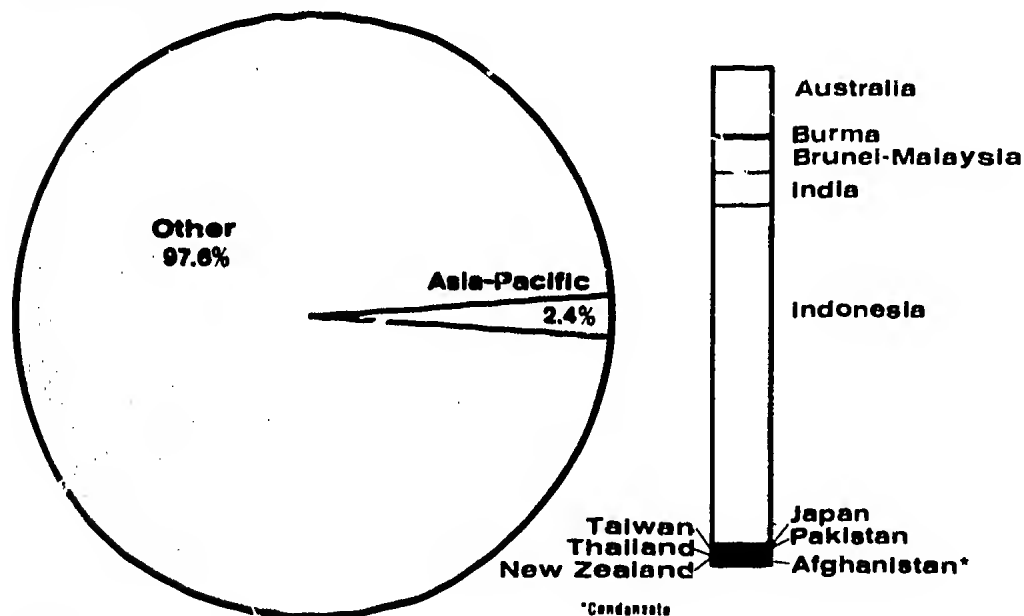


# ASIA-PACIFIC AREA OIL SUMMARY, 1970

## WORLD PRODUCTION



## WORLD RESERVES

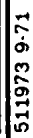


511976 9-71

\*Condensate

## Summary of Gas and Oil Production for the Asia-Pacific Area

	Oil Production (Thousand b/d)			Natural Gas (Billion Cu. Ft.)		
	1969	1970	1st Qtr 1971	1969	1970	1st Qtr 1971
Australia.....	42	172	253	9.4	75.0	15.7
Burma.....	15	18	19	2.9	1.6	0.4
Brunei-Malaysia.....	123	148	160	.....	.....	.....
India.....	137	135	140	9.7	10.3	4.9
Indonesia.....	734	853	896	91.2	78.2	27.3
Japan.....	16	16	16	33.6	72.7	20.7
Pakistan.....	10	10	10	116.8	97.8	27.0
Taiwan.....	2	2	2	32.4	44.7	6.3
Thailand.....	Negl.	Negl.	Negl.	.....	.....	.....
Afghanistan.....	.....	.....	.....	60.4	58.9	16.3
Total.....	1,079	1,354	1,501	365.4	439.2	118.3



## I. Introduction

Oil was discovered in 1869, when 53 localities of oil seepages were recorded by the Royal Netherlands Academy of Science in Amsterdam. The main producing area is Central Sumatra, and other important fields are found in northern and southern Sumatra and Kalimantan.

Pertamin, the state owned oil firm, has exclusive rights to operate the petroleum and natural gas industry in Indonesia. About 40 foreign oil companies are involved in exploration activities under production sharing or work contracts with Pertamina.

## II. Statistics on Operation

### A. Crude petroleum:

#### 1. Production (thousand barrels per day):

1966	1967	1968	1969	1970
467	510	602	734	853*

Percent of world total: 1.9% (1970)

#### 2. Reserves:

10 billion barrels

Percent of world total: 1.6% (1970)

#### 3. Refinery capacity (thousand barrels per stream day)

200.0

### B. Natural gas:

#### 1. Production (billion cubic feet):

1966	1967	1968	1969	1970
72.0	115.1	108.4	91.2	78.2

#### 2. Reserves:

2.2 trillion cubic feet (1968)

### C. Employment in petroleum sector:

Indonesians . . . . . N.A.

Foreigners . . . . . N.A.

Total . . . . . N.A.

## III. Financial Data

### A. Oil revenues:

\$180 million (1970)

Percent of total government revenue: 20%

### B. Local expenditures of foreign oil companies:

N.A.

\*Estimate.

## IV. Trade

## A. Exports

## 1. Crude petroleum (thousand barrels)

1967	1968	1969	1970
112,400	145,500	159,500	223,200 (est.)

## 2. Refined products (thousand barrels)

Product	1967	1968	1969
Gasoline	1,297	561	1,600
Kerosene and jet fuel	940	1,087	1,445
Distillate fuel oil	4,124	1,001	1,158
Residual fuel oil	5,116	5,402	6,118
Lubricants	0	0	0
Other	17,623	1,872	23,728
Total	29,010	27,923	34,058

## 3. Natural gas

N.A.

## B. Imports

## 1. Crude petroleum (thousand barrels)

1967	1968	1969
0	0	217

## 2. Refined products (thousand barrels)

Product	1967	1968	1969
Gasoline	0	79	0
Kerosene and jet fuel	0	55	3,072
Distillate fuel oil	0	0	0
Residual fuel oil	0	0	0
Lubricants	412	213	0
Other	0	12	2
Total	412	359	3,074

## 3. Natural gas

N.A.

## C. Domestic consumption (thousand barrels):

1969

69,565



## V. Oil and Gas Fields and Related Installations

### A. Oilfields:

Name	Concessionaire	Date Discovered	Cumulative Production through 1969 (barrels)
Duri	Caltex	1941	185, 250, 000
Linggi	N A	1928	175, 200, 000
Mina	Caltex	1944	1, 076, 610, 000
Rantau	Asampera	1929	143, 200, 000
Sanga Sanga	Virginian International and Roy Huffington	1898	235, 880, 000
Talang-Akar	N A	1922	238, 720, 000
Tarakan	Japex	1906	193, 870, 000
Total			2, 248, 820, 000

### B. Gasfields:

Radja	Stanvac	N A	N A
-------	---------	-----	-----

### C. Number of producing wells:

1. Oil	2, 074 (1968)
2. Gas	1, 015 (1968)

### D. Pipelines:

N A.

## VI. Companies

### A. Producing:

Caltex  
Stanvac  
Pertamina (state-owned)

### B. Refining:

Pertamina

### C. Pipelines:

N A.

## Asia-Pacific Area Refineries

Company and Refinery Location	Gross capacity (bpd)	Cracking capacity	Cat reforming capacity
<b>AUSTRALIA</b>			
Amoco Australia Pty. Ltd., Bulwer Island	25,000	9,500	5,200
Aspal Refineries Ltd., Lyttelton	45,000	21,500	11,800
Australian Oil Refinery Pty. Ltd., Kurnell	90,000	43,000	9,500
Boral Ltd., Matraville	20,000	9,100	6,200
BP Refinery Pty. Ltd., Kwinana	87,000	16,800	20,500
Westaustrat	50,000		15,500
Petroleum Refineries (Australia) Pty. Ltd., Altona	65,000	25,000	15,100
Adelaide	47,000		15,000
Shell Refining (Australia) Pty. Ltd., Clyde	60,000	26,000	9,500
Geelong	105,000	19,000	18,000
<b>TOTAL</b>	<b>591,000</b>	<b>186,900</b>	<b>126,100</b>
<b>BURMA</b>			
Burma Oil Co. (1954) Ltd. (People's Oil Industry), Chawik	6,300		
Pyinaw	20,000		
<b>TOTAL</b>	<b>26,300</b>		
<b>CAMBODIA</b>			
Soc. Khmere de Raffinage, Sihanoukville	10,000		
<b>CEYLON</b>			
Ceylon Petroleum, Sappagaskande	44,000		4,000
<b>GUAM</b>			
Guam Oil & Refining Co., Guam Island	25,000		
<b>INDIA</b>			
Assam Oil Co., Ltd., Digboi	14,200		
Burmah-Shell Refineries Ltd., Bombay	81,000	14,000	8,000
Caltex Oil Refining (India) Ltd., Vellore	33,000	8,400	
Cochin Refineries, Ltd., Cochin	55,000		6,000
Esso Standard Refining Co. of India, Bombay	70,000	11,000	
Indian Refineries Ltd., Baranoli (Bihar)	60,000		6,000
Noonmati (Assam)	15,000		
Baroda (Gujarat)	60,000		6,000
Madras Refineries, Madras	55,000		2,300
<b>TOTAL</b>	<b>446,200</b>	<b>33,400</b>	<b>28,300</b>
Government, India	50,000		(Planned)
<b>INDONESIA</b>			
P. N. Permina			
Pangkalan Brandan	1,000		
Balik Papan	75,000		
Pladju	110,000		
Wonokromo	3,200		
P. T. Stanvac Indonesia, Sungai Gerong	70,000	19,500	
<b>TOTAL</b>	<b>288,200</b>	<b>19,500</b>	
Pertamina, Dumai	160,000		(Under construction)

## Asia Pacific Area Refineries (Continued)

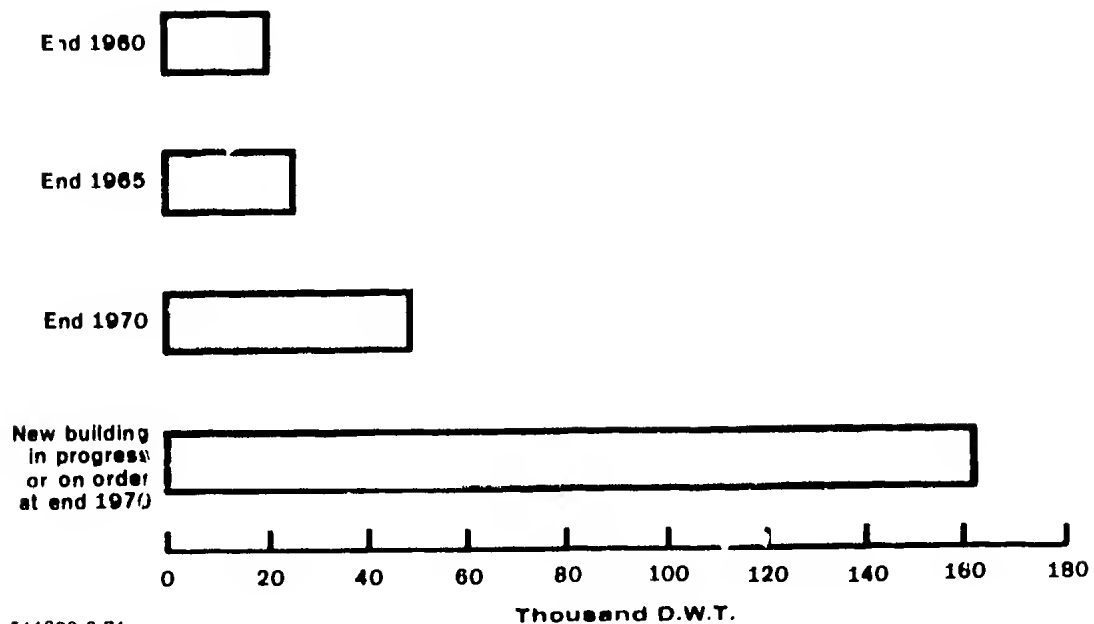
Company and refinery location	Crack- ing capacity (bbl./day)	Crack- ing capacity	Crack- ing reforming capacity
JAPAN			
Asahi Oil Co. Ltd.			
Hakodate	25,000		
Yokohama	100,000		15,000
Daiichi Oil Co.			
Hiroshima	100,000		0,000
Yokkaichi	40,000	3,500	2,000
Fuji Kasei, Kawan	47,000		
Fuji Oil Ref. Co., Chiba	70,000		0,500
General Sekiyu K.K. Ltd.			
Kawasaki	55,000		0,000
Sakai	120,000		12,000
Idemitsu Kasei Co.			
Chiba	180,000		23,000
Himeji	110,000		
Tokuyama	100,000	7,000	15,000
Kashima Oil, Kashima	120,000	14,000	0,000
Kansai Oil, Sakai Osaka	60,000		5,000
Koa Oil Co., Marifu	140,000	11,000	10,000
Kyokuto Petroleum Industries, Ltd., Chiba	60,000		5,000
Kyoshu Oil Co., Oita	100,000		0,000
Maruon Oil Co.			
Chiba	155,000	15,000	10,000
Matuyama	50,000		
Shimotsu	37,500	5,000	0,000
Minato-Ku, Kawasaki	50,000		7,500
Mitsubishi Sekiyu K.K.			
Kawasaki	74,400		11,000
Mitsubishi	130,000	9,000	28,700
Nichino Oil Ref. Co., Kawasaki	57,000		0,000
Nihonkai Oil Co., Toyonaka	30,000		
Nippon Mining Co. Ltd.			
Funakawa	19,500		
Mitsubishi	160,000	3,000	23,000
Nippon Pet. Ref. Co.			
Kudamatsu	42,000		5,200
Muroran	10,000		
Negishi	220,000	20,000	13,000
Yokohama	70,000	13,100	3,300
Nippon Sekiyu K.K.			
Akita	4,000		
Niigata	20,000		5,100
Showa Sekiyu K.K.			
Kawasaki	100,000		22,000
Niigata	43,000		4,800
Showa-Yokkaichi Sekiyu K.K., Yokkaichi	180,000	16,200	22,800
Taiyo Sekiyu K.K., Kameoka	50,000		
Taisei Toppling Plant Co., Kobiki	4,400		
Toa Nenryo Kagyo Co.			
Kawasaki	60,000		
Shimizu	43,500		4,000
Wakayama	187,000	23,300	36,000
Toa Sekiyu K.K., Kawasaki	100,000		11,000
Toho Sekiyu K.K., Owase	40,000		
TOTAL	3,430,900	140,100	341,800
Asahi Oil, Sakai	60,000	(Planned)	
Fuji Kasei, Onahama	30,000	(Planned)	
Koa Oil, Osaka	60,000	(Under construction)	
Shell Sekiyu & Showa Oil Co., Kyushu	150,000	(Planned)	
Tohoku Oil, Sendai Bay	40,000	(Under construction)	

## Asia-Pacific Area Refineries (Continued)

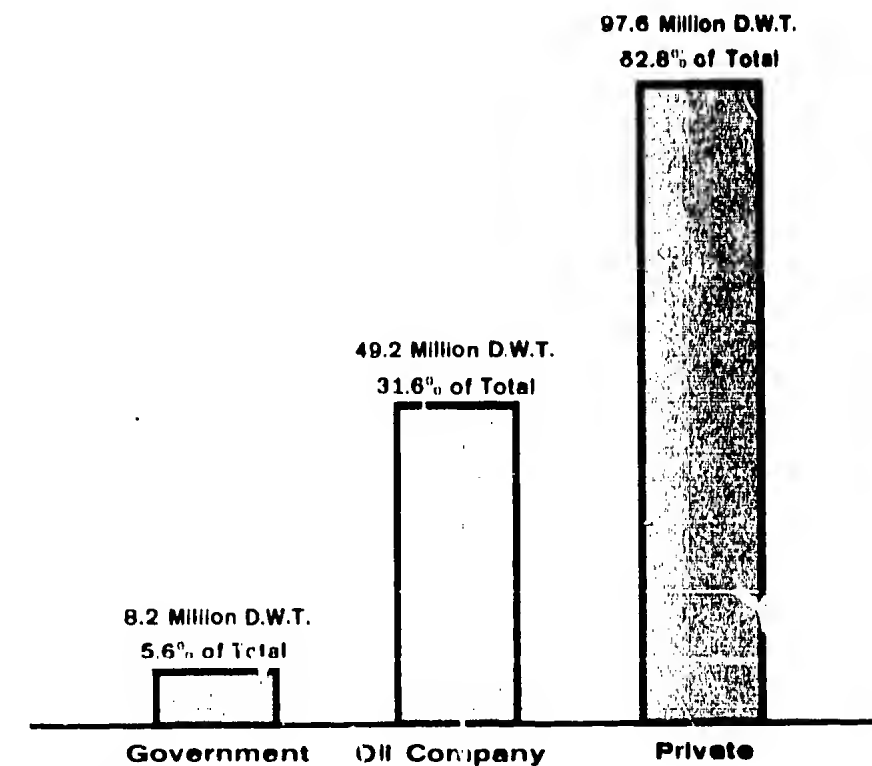
Company and refinery location	Crude capacity (b/d)	Cat-cracking capacity	Cat-reforming capacity
<b>KOREA, SOUTH</b>			
Honam Oil Refinery, Yeosu .....	85,000		5,000
Korea Oil Corp., Ulsan .....	115,000		0,000
<b>TOTAL</b> .....	<b>180,000</b>		<b>11,000</b>
Kyung In Energy Development Co., Incheon .....	50,000		(Planned)
<b>MALAYSIA-BRUNEI-SINGAPORE</b>			
Esso Refinery Singapore, Ltd., Pasir-Panjang (Singapore) .....	25,000		
Esso Singapore Private Ltd., Pulau Ayer Chawan .....	80,000		4,000
Esso Standard Malaya Ltd., Port Dickson (Malaya) .....	35,000		4,000
Mobil Refining Co. Malaysia Ltd., (Singapore) Sungai Jurong .....	27,000		4,000
Sarawak Shell Oilfields Ltd., Lutong (Borneo) .....	65,000		
Shell Refining Co., Port Dickson (Malaya) .....	38,000		2,400
Shell Refining Co., (Singapore) Ltd., Pulau Bukom .....	235,000		10,000
<b>TOTAL</b> .....	<b>505,000</b>		<b>24,400</b>
<b>NEW ZEALAND</b>			
New Zealand Refining Co., Whatgarah .....	80,000		21,000
<b>OKINAWA</b>			
Esso Standard Eastern, Hishihara .....	80,000	(Under construction)	
Gulf Oil, Helanza Island .....	100,000	(Under construction)	
Toyo Petroleum Refining, Ryukyn Island .....	30,000	(Under construction)	
<b>PAKISTAN</b>			
Attock Oil Co. Ltd., Rawalpindi .....	10,000		
Eastern Refinery, Chittagong .....	33,800		1,800
National Refinery Ltd., Karachi .....	13,000		
Pakistan Refinery Ltd., Karachi .....	50,000		2,500
<b>TOTAL</b> .....	<b>106,800</b>		<b>4,300</b>
Pakistan Refinery Ltd., Multan, West Pakistan .....	40,000		(Planned)
<b>PHILIPPINES</b>			
Caltex Philippines, Inc., Bantangas .....	62,000	12,700	7,000
Bataan Refining Corp., Bataan .....	50,000	15,000	7,200
Filoil Refinery Corp., Rosario Cavite .....	15,000		2,000
Shell Refining Co. (Philippines) Inc., Tabangao .....	65,000		9,000
<b>TOTAL</b> .....	<b>192,000</b>	<b>27,700</b>	<b>25,200</b>
<b>TAIWAN</b>			
Chinese Petroleum Corp., Kaoshiung .....	218,000	6,500	8,600
China Gulf Oil Co., Kaoshiung .....	11,000		
<b>TOTAL</b> .....	<b>229,000</b>	<b>6,500</b>	<b>8,600</b>
Chinese Petroleum Corp., Shenao .....	100,000		(Planned)
<b>THAILAND</b>			
Defense Energy Department, Bangkok .....	25,000	2,400	5,000
Fang Refinery, Chleng Mai .....	1,200		
Thai Oil Refinery Co., Sriracha .....	65,000	6,800	9,100
<b>TOTAL</b> .....	<b>91,200</b>	<b>9,200</b>	<b>14,100</b>
Summit Industrial Corp., Bangkok .....	50,000		(Under construction)

OIL  
TANKERS

### AVERAGE SIZE OF TANKERS



**TANKER OWNERSHIP Oil SUMMARY, 1970**  
(Excluding combined carriers)



511982 9-71

World Tanker Fleet\* by Flag, 1970

Flag	No. of Ships	Total DWT	% World
Liberia.....	761	38,566,085	24.96
United Kingdom...	419	21,171,798	13.71
Norway.....	327	18,330,334	11.73
Japan.....	195	10,396,314	10.61
United States.....	341	8,934,897	5.78
Greece.....	196	7,141,179	4.62
France.....	99	5,721,715	3.70
Panama.....	144	5,502,354	3.56
Italy.....	125	4,706,742	3.05
U.S.S.R.....	187	4,289,084	2.73
Sweden.....	67	3,757,247	2.43
Netherlands.....	84	3,125,681	2.02
West Germany....	43	2,373,004	1.54
Denmark.....	37	2,227,866	1.51
Spain.....	72	2,203,274	1.48
Finland.....	36	1,087,156	0.70
Brazil.....	31	1,014,580	0.66
Argentina.....	39	719,519	0.47
Others.....	256	7,243,827	4.69
Total.....	3,461	154,599,658	100.00

\* Over 6,000 DWT

World Tanker Fleet by Size  
(Million DWT)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Under 25,000 d.w.t.....	36.8	35.6	34.0	32.7	31.3	31.2	30.0	29.7	29.8	28.9	28.3
25-44,999 d.w.t.....	21.6	21.3	24.7	25.4	25.4	25.6	25.3	25.0	25.6	26.7	27.4
45-64,999 d.w.t.....	4.3	6.0	8.4	12.0	16.1	19.1	21.2	21.8	22.1	22.0	22.5
65-84,999 d.w.t.....	0.5	1.3	1.8	2.6	4.8	8.1	12.7	14.9	15.7	16.5	17.1
85-104,999 d.w.t.....	0.7	0.7	1.0	1.8	3.5	5.0	6.6	10.5	12.9	14.2	15.4
105-124,999 d.w.t.....	0.1	0.2	0.3	0.4	0.4	0.9	2.5	3.5	4.8	5.3	6.0
125-204,999 d.w.t.....	.....	.....	0.1	0.1	0.1	0.1	0.9	2.5	5.4	8.3	10.3
205,000 d.w.t. and over.....	.....	.....	.....	.....	.....	.....	0.2	.....	3.2	13.1	28.7
TOTAL.....	64.0	67.1	70.3	75.0	81.6	90.1	99.4	107.9	119.5	135.2	155.7





**CRUDE OIL POSTED PRICES**  
**AND**  
**PETROLEUM CONVERSION FACTORS**

**Crude Oil Posted Prices**  
(Prices in <sup>per</sup> U.S. barrel, f.o.b.)

Country	Port	API gravity	Dec. 1969 price	1 Jun. 1971 price
Persian Gulf:				
Arabian Light.....	Ras Tanura.....	34°	1.80	2.285
Arabian Medium.....	do.....	31°	1.59	2.187
Arabian Heavy.....	do.....	27°	1.47	2.059
Qatar.....	Umm Said.....	41°	1.95	2.387
Iraq - Basra.....	Khor al Amaya.....	35°	1.72	2.259
Kuwait.....	Mena al Ahmadi.....	31°	1.59	2.187
Iran.....	Kharg Island.....	34°	1.79	2.274
Iran, Gach Saran.....	do.....	31°	1.63	2.228
Abu Dhabi, Umm Shaif.....	Fa Island.....	31°	1.86	2.331
Abu Dhabi, Murban.....	Jebel Dhanna.....	39°	1.88	2.341
Oman.....	Mina Al Fahal.....	33°	1.82	2.310
Dubai.....	Fateh.....	32°	....	2.233
Mediterranean:				
Arabian Light.....	Sidon.....	34°	2.17	3.158
Iraq.....	Tripoli/Banais.....	34°/36°	2.21	3.158/3.188
Libya.....	Brega.....	40°	2.10/2.21	3.423
Algeria.....	Arzew.....	40-44°	2.36-2.65	3.576
Algeria.....	Bougie.....	40-44°	2.35-2.65	
Algeria.....	Skhirra.....	40-44°	2.30-2.61	
Africa:				
Nigeria.....	Eseravos.....	34°	(Feb. 69) 2.17	3.195
Nigeria.....	Bonny.....	34°	(Feb. 69) 2.17	3.195
Nigeria.....	do.....	27°	(Feb. 69) 2.03	3.087
Western Hemisphere:				
Venezuela.....	Puerto la Cruz.....	35°	.....	2.80
Venezuela.....	La Salina.....	31°	.....	2.52
Venezuela.....	Amuay.....	26°	.....	2.30
Venezuela.....	La Salina.....	16°	.....	1.85
Venezuela.....	Bachaquero.....	36°	.....	2.73
Venezuela.....	Cardon.....	31°	.....	2.55
Venezuela.....	Bachaquero.....	28°	.....	2.31
Venezuela.....	Puerto Miranda.....	12°/13°	.....	1.67

## Petroleum Conversion Factors

	Volumetric Measure					
	Cubic meters	Cubic feet	US gallons	Imperial gallons	Liters	US barrels
Cubic meter.....	1.0	35.31	264.15	216.95	999.97	6.285
Cubic foot.....	0.02832	1.0	7.481	6.229	28.32	0.178
US gallon.....	0.00379	0.1337	1.0	0.8327	3.785	0.0238
Imperial gallon.....	0.00453	0.160	1.201	1.0	4.546	0.0286
Liter.....	0.001	0.0353	0.2641	0.2200	1.0	0.006293
US barrel.....	0.1590	5.615	42.0	35.0	158.9	1.0

*Rule of thumb for conversion of barrels and tons:*Barrels per day  $\times 50$  = tons per yearTons per year  $\div 50$  = barrels per day*Units of weight:*

Short ton..... 2,000 pounds

Long ton..... 2,240 pounds

Metric ton..... 2,205 pounds

*Units of volume:*

Measurement ton (ship ton)..... 40 cubic feet

Register ton..... 100 cubic feet

*Representative conversion factors:*

Country	Barrels per metric ton
Abu Dhabi.....	7.493
Algeria.....	7.713
Angola.....	7.223
Bahrain.....	7.335
Congo (Middle).....	7.508
Gabon.....	7.245
Iran.....	7.370
Iraq.....	7.541
Israel.....	7.286
Kuwait.....	7.261
Libya.....	7.615
Morocco.....	7.602
Nigeria.....	7.508
Qatar.....	7.719
Saudi Arabia.....	7.428
Saudi/Kuwait Neutral Zone.....	6.849
Turkey.....	6.400
United Arab Republic.....	6.901

## GLOSSARIES

## GLOSSARY OF TECHNICAL TERMS

API Gravity.....	An arbitrary scale adopted by the American Petroleum Institute for expressing the relative weight of oils.
Avgas.....	Fuel for piston-type aircraft engines.
Avtur.....	Kerosine used in aviation gas turbines.
Barrel.....	Measure of volume used for petroleum and its products: 1 barrel = 42 US gallons = 35 Imperial gallons (approx.) = 159 Liters (approx.)
Barrels per Day (b/d).....	The rate of flow from midnight of one day to midnight of the next day. The rate of flow in $\frac{1}{365}$ th part of a normal year. Used to describe both production and refining capacity.
Barrels per Stream Day (b/sd).....	The flow rate during a 24-hour period of actual operation. Normally used to describe refinery throughput rate, reflecting appropriate allowances for periods when a refinery may be shut down for maintenance and/or repairs.
Barrels per Calendar Day (b/cd).....	The same as barrels per day. Normally used to describe the effective or annual average refinery throughput rate.
Base.....	A term relating to the chemical nature of crude petroleum. Crude petroleum may be paraffinic, asphaltic, or mixed base, according to the presence of paraffin, asphalt, or both in the residue after distillation. Naphthalene base is approximately synonymous with asphaltic base.
Bunker Fuel.....	Any oil taken into the bunkers of ships.
Cracking.....	The process of breaking down certain hydrocarbons into simpler ones of lower boiling points by means of excess heat, distillation under pressure, etc., in order to give a greater yield of products with lower boiling points than could be obtained by simple distillation.
Crude Oil.....	See Petroleum.
DERV Fuel.....	Diesel engine road vehicle fuel.
Deadweight Tonnage (DWT).....	The carrying capacity of a ship expressed in long tons and representing the difference between displacement loaded and displacement light.
Displacement Light.....	The weight of a ship in long tons, excluding the weight of the cargo, passengers, fuel, water, stores, dunnage, and such other items necessary for use on a voyage.
Displacement Loaded.....	The weight of a ship in long tons, including the weight of the cargo, passengers, fuel, water, stores, dunnage, and such other items necessary for a voyage.
Flare.....	A device for the safe disposal of gases by burning.
Fuel Oil.....	A heavy distillate, residue, or a blend of these used as fuel for the production of heat or power.
Gasoline.....	A refined petroleum distillate, normally boiling within the limits of 30° to 204° Celsius, suitable for use as a fuel in spark-ignition internal combustion engines.
Liquefied Natural Gas (LNG).....	Gas, predominately methane, from oil field sources, which is held in the liquid state by the application of pressure and low temperature to facilitate transport and storage.
Liquefied Petroleum Gas (LPG).....	Light hydrocarbon material, gaseous at atmospheric temperature and pressure, held in the liquid state by pressure to facilitate storage, transport, and handling. Commercial liquefied gas consists essentially of propane, butane, and mixtures thereof.
Natural Gas.....	A combustible gas formed naturally in the earth and often produced in association with petroleum. It is usually classed as wet or dry, depending on whether the gasoline constituents it contains are large or small.
OAPEC.....	Organization of Arab Petroleum Exporting Countries.

OPEC	Organization of the Petroleum Exporting Countries, established in September 1960. Members include Abu Dhabi, Indonesia, Iran, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and Venezuela.
Octane Number	A measure of the anti-knock value of a gasoline.
Petroleum	A naturally occurring liquid mixture consisting essentially of many different hydrocarbons (also called crude oil). It is the raw material from which gasoline, kerosene, lubricating oil, fuel oil, paraffin, asphalt, and other products are obtained. In modern technical usage the term includes gaseous and solid as well as liquid hydrocarbons.
Petroleum Naphtha	Refined, partly refined, or unrefined petroleum products and liquid products of natural gas.
Reserves	The amount of crude oil (or natural gas) expected to be recovered profitably from a given reservoir by known techniques under known or assumed economic conditions.
Topped Crude	Crude petroleum from which lighter constituents have been removed by distillation.
T2-SE AL	T 2 Tanker Equivalent—A vessel of 16,765 DWT that is capable of sailing at 14.5 knots.
Wildcat	A well drilled in search of petroleum without a complete geological investigation of the area.

## Glossary of Company Names and Organizations

ADMA	Abu Dhabi Marine Areas
ADPC	Abu Dhabi Petroleum Co.
AEO	Anglo-Egyptian Ltd.
AFROPEC	Africa-Cities Service Petroleum Corp.
AGIP	The operating company for ENI (Ente Nazionale Idrocarburi)
AMI	Ausonia Mineralia
AMIF	Ausonia Mineralia Française
AMINOIL	American Independent Oil Co.
AMOFHANCE	American Overseas French Petroleum Company Inc.
AMOSEAN	American Overseas Petroleum Ltd.
APC	Askelon Pipeline Company Holdings Ltd.
ARAMCO	Arabian-American Oil Co.
ASCOP	Cooperative Association
AUXERAP	Société Auxiliaire De L'Entreprise De Recherches et D'Activités Pétrolières
BAPCO	Bahrain Petroleum Co. Ltd.
BOMIN	Bachumer Mineralol
BPRM	Bureau de Recherches et de Participations Minières
BP	British Petroleum Co. Ltd.
CALTEX	California Texas Oil Corp.
CAREP	Compagnie Algérienne de Recherche et d'Exploitation du Pétrole
CFP	Compagnie Française des Pétroles
CFP (A)	Compagnie des Pétroles (Algeria)
CLP	Compagnie Libanaise des Pétroles
CONOCO	Continental Oil Co.
COPAREX	Compagnie des Participations de Recherches et d'Exploitations Pétrolières
COPE	Compagnie Orientale des Pétroles d'Egypte
CORI	Compagnie Recherche Idrocarburi
CPA	Compagnie des Pétroles d'Algérie
CPT	Compagnie des Pétroles TOTAL
GREPS	Compagnie De Recherches Et D'Exploitation De Pétrole Au Sahara
DEA	Deutsche Erdöl A.G.
DELEK	Israel Fuel Corp. Ltd.
DOPCO	Dashtestan Offshore Petroleum Co.
DUMA	Dubai Marine Areas Ltd.
ELF	Essence et Lubrifiant de France
EGPC	Egyptian General Petroleum Co.
ENI	Ente Nazionale Idrocarburi
ERAP	Entreprise Des Recherches Et D'Activités Pétrolières
EURAFREP	Soc. De Recherches et D'Exploitation De Pétrole
FPC	Farsi Petroleum Co.
FRANCAREP	French Compagnie Franco-Africaine de Recherches Pétrolières
GBAG	Gelsenkirchner Bergwerks Aktiengesellschaft
GPC	General Petroleum Co. (Syrin)
GPO	General Petroleum Organization
HISPANOIL	Hispanica De Petroles
IEOC	International Egyptian Oil Co.
INA	Industria Nafte Zagreb
INIMICO	Iranian Marine International Co.
INOC	Iraq National Oil Co.
IPAC	Iran Pan American Oil Co.
IPC	Iraq Petroleum Co. Ltd.
JAPEX	Japanese Petroleum Exploration Co.
KNPC	Kuwait National Petroleum Co.
KOC	Kuwait Oil Co.
KSPDC	Kuwait Shell Petroleum Development Co. Ltd.
LAC	Libyan Atlantic Co.
LAOC	Libyan American Oil Co.
LAPCO	Lavan Petroleum Co.
MEDRECO	Mediterranean Refining Co.
MURCO	Murphy Oil Co.



NIOC	National Iranian Oil Co.
NIP	Naphta Israel Petroleum Corp. Ltd.
OAPEC	Organization of Arab Petroleum Exporting Countries
OMNIBEX	Omnium de Recherche et d'Exploitation Pétrolières
OPEC	Organization of Petroleum Exporting Countries
PANAM	Pan American Libya Oil Co.
PARTEN	Participations and Explorations Corp.
PDO	Petroleum Development Oman
PECHUPCO	Persian Gulf Petroleum Co.
PERTAMINA	Pertamina Negara Pertambangan Minyak Dan Gas Bumi Nasional
PETRANGOL	Companhia de Petróleo de Angola
PETROMIN	General Petroleum and Mineral Organization
PETROPAR	Société De Participations Pétrolières
PREPA	Société de Prospection et d'Exploitation Pétrolières en Algérie
SADCO	Syrian Arab Distributing Co.
SAFHEP	Soc. Anonyme Française De Recherche et D'Exploitation De Pétrole
SCP	Moroccan Petroleum Co.
SEREPT	Soc. De Recherches et D'Exploitation Des Pétroles En Tunisie
SGPO	Syrian General Petroleum Organization
SHIP	Soc. Iranio-Italienne Des Pétroles
SIPEP	Soc. Italiano-Tunisienne Petroleum Exploitation Co.
SNPA	Soc. Nationale des Pétroles d'Aquitaine
S.N. Reqd.	Soc. Nationale De Recherche et D'Exploitation Des Pétroles En Algérie
SOCAL	Standard Oil Co. of Calif.
SOFIRAN	Soc. Française Des Pétroles D'Iran
SOHIO	Standard Oil Co. of Ohio
SONATRACH	Soc. Nationale Pour La Recherche, La Production, Le Transport, La Transformation et La Commercialization Des Hydrocarbures
SONOL	Sonol Israel Ltd.
SOPC	Suez Oil Processing Co.
SOPEG	Soc. Pétrolière de Gazaouie
SOTHRA	Soc. de Transport du Gaz Naturel D'Hassi R'Mel au' Arzew
SPAFE	Soc. Des Pétroles D'Afrique Equatoriale
SSRP	Soc. Saharienne de Recherches Pétrolières
TPAO	Turkish Petroleum Corp.
TRAPES	Soc. de Transport de Pétroles de l'Etat Saharien
TRAPSA	Compagnie de Recherches et d'Exploitation de Pétrole Au Sahara
WEPCO	Western Desert Petroleum Co.

**COMPANY DIRECTORY**  
(Middle East and African Countries)

**1. Principal sources were:**

*Oil and Petroleum Yearbook*, Walter R. Skipper, Vinty House, Queen Street Place, London, E.C.4, published annually in October.

*International Petroleum Register*, published annually by Mouna Palmer, 25 West 45th Street, New York 35, New York.

\*\*\*\*\*

**ABU DHABI MARINE AREAS**, Brittonile House, Elmshury Circus, London, E.C.2. (Incorporated in London on 18 May 1954). Holds a 65-year concession, granted in 1953 by the sheik of Abu Dhabi, in a 12,000-square-mile area in the Persian Gulf off the Trucial Coast. Two-thirds interest held by British Petroleum Co., Ltd.; one-third held by Cie. Francaise des Pétroles. Dubai Marine Areas, Ltd., under the same ownership, has a Persian Gulf concession over the neighboring sheikhdom of Dubai.

**ABU DHABI PETROLEUM CO., LTD.**, formerly Petroleum Development (Trucial Coast), Ltd., 214 Oxford St., Oxford Circus, London, W.1. This affiliate of Iraq Petroleum Co., Ltd., holds concessions on the Trucial Coast in the Persian Gulf.

**ABU DHABI PETROLEUM DEVELOPMENT CO.** (See DAIKYO)

**AFRICA—CITIES SERVICE PETROLEUM CORP.** (AFROPEC). Ownership—49% Cities Service, 33.5% ERAP, and 17% Compagnie Franco-Africaine de Recherches Pétrolières.

**AGIP**, S.p.A., Viale dell'Arte 72, Rome, Italy (incorporated April 1926). AGIP is the operating company for Ente Nazionale Idrocarburi (ENI), Italy's government oil agency, which owns 99.75% of AGIP's stock (see below). It has integrated operations in Italy directly and through other companies. AGIP has a joint interest with the government-owned National Iranian Oil Co. in three Iranian concessions outside the consortium area. Rights are held by a 50/50 owned company, Société Franco-Italienne des Pétroles (SIRIP). In addition, AGIP holds 16.6% interest of the Iran Marine International Oil Co. (IMINOCO). AGIP also operates in Tunisia, Gabon, and Nigeria.

**AGIP SAUDI ARABIA**, a wholly owned subsidiary. Ente Nazionale Idrocarburi (ENI) shares with Phillips Petroleum Co. a contract to explore for PETROMIN (a wholly owned ENI affiliate) an area relinquished from ARAMCO's concession area.

**ALEXANDRIA PETROLEUM CO.**, founded in 1954, to operate a new refinery at Alexandria. Its original capacity has now been increased to about 53,000 barrels per day. It is owned almost completely by the Egyptian General Petroleum Corp. (EGPC).

**AMERADA PETROLEUM CORP.**, 120 Broadway, New York 5, New York (founded in Delaware on 7 February 1920). In addition to interest in the Western

Hemisphere, Amerada has one-sixth interest in a 19,551,000-square-mile area in Libya and one-third in a 30,000-square mile area in Somalia. It holds one-third interest in Concorde Petroleum Corp. and half ownership of Oasis Oil Co. of Libya.

**AMERICAN INDEPENDENT OIL CO. (AMINOIL)**, 90 Rockefeller Plaza, New York 4, New York (founded on 8 July 1947 in the state of Delaware). Aminoil has a concession consisting of 2,600 square miles covering Kuwait's half interest in the Neutral Zone. It also has a 0.832% interest in Iranian Oil Participants, Ltd., through part ownership in Irican Agency, Ltd. The company is owned by R. J. Reynolds Industries, Inc.

**AMERICAN INDEPENDENT OIL CO. OF CALIFORNIA** (incorporated in San Francisco on 28 July 1949). Wholly owned by Aminoil (see above). In September 1949 received an exclusive concession from Kuwait to explore and develop oil in and about the islands of Kubar, Qarn, and Umm al Maradhim off the coasts of Kuwait and the Neutral Zone.

**AMERICAN INDEPENDENT OIL CO. OF IRAN** (founded on 21 April 1955 in the state of Delaware). Wholly owned subsidiary of Aminoil (see above), holds a 0.832% interest in Iranian Oil Participants, Ltd., through part ownership of Irican Agency, Ltd.

**AMERICAN INTERNATIONAL OIL CO.**, 500 North Michigan Ave., Chicago, Illinois (founded as Pan American International Oil Corp. in 1959, the name was changed in 1962). A wholly owned subsidiary of Standard Oil Co. (Indiana). Through its own subsidiaries usually characterized by the prefix "Pan American," American International holds interests in Egypt, Libya, Iran, and the Persian Gulf.

**AMERICAN OVERSEAS FRENCH PETROLEUM CO., INC.** Owned 100% by California Texas Oil Corp. Operates in Algeria.

**AMERICAN OVERSEAS PETROLEUM LTD. (AM-OSEAS)**, 380 Madison Avenue, New York, New York (established 9 January 1952 in the Bahamas Islands). Owned jointly by Texaco, Inc., and California Asiatic Oil Co., a subsidiary of Standard Oil of California, and operates concessions held by its owners in Libya and Turkey.

**ANGLO-EGYPTIAN OILFIELDS, LTD. (AEO)**, name changed to Al Nasr Oilfields Co., on 4 January 1962 and, in turn, to General Petroleum Co., in 1964, after additional nationalization and reorganization.

**APCO OIL CORP.**, Liberty Bank Building, Oklahoma City, Oklahoma (founded 15 August 1960). Held three concessions in Libya through its wholly owned subsidiary, Libya Texas Petroleum Refining Co., until May 1968, when they were revoked by the Libyan government.

**AQUITAINE LIBYE** (founded May 1963), a subsidiary (99.88%) of Société Nationale des Pétroles d'Aquitaine (SNAP). Holds 28% interest and is operator of concessions held by itself and Hispania de Pétroles (a subsidiary of the Spanish Instituto Nacional de Industrias) 42%, Anzimp (an affiliate of Entreprise de Recherches et d'Activités Pétrolières, ERAP) 14%, and Murco Libya Oil Co. (a subsidiary of Murphy Oil Corp.) 10% in Libya's Sirte Basin. Aquitaine also has interest (20%) in the Fezzan area of Libya in conjunction with Deutsche Erdöl A.G. (20%), and Ausonia Mineraria (60%).

**ARABIAN AMERICAN OIL CO. (ARAMCO)**, Dhahran, Saudi Arabia, and 505 Park Avenue, New York 22, New York (incorporated in Delaware on 8 November 1933). Holds concessions of about 105,000 square miles of onshore and offshore Saudi Arabia. Owner companies are Standard Oil Co. of California; Texaco, Inc.; and Standard Oil Co. (N.J.) with 30% each, and Socony Mobil Oil Co., Inc., 10%.

**ARABIAN OIL COMPANY, LTD.**, Pox 1679, Tokyo, Japan (established in February 1958). Holds concessions to the Neutral Zone offshore area, both the Saudi Arabian and Kuwait shares. Formed by an agreement between Japan Petroleum Trading Co., Ltd., and Saudi Arabia.

**ASHKELON PIPELINE COMPANY HOLDINGS, LTD. (APC)**, held directly by the Israeli government under Canadian registration, eventually to be sold as a public corporation. It constructed a 42-inch pipeline from the Gulf of Aqaba at Eilat to Ashkelon on the Mediterranean in late 1969; the second stage, which will raise the capacity to 1,200,000 barrels per day, is to be completed by 1975.

**ASHLAND OIL AND REFINING CO.**, 1401 Winchester Avenue, Ashland, Kentucky (established October 1930). In addition to operations in the Western Hemisphere, Ashland also has an interest in the Middle East through its 12.7% interest in American Independent Oil Co. and 50% interest in Circle Oil Co. of Libya.

**ATLANTIC RICHFIELD CO.**, 260 Broad Street, Philadelphia (founded April 1870 as Atlantic Refining Co., changed to present name May 1966). Venezuela is the chief area of Atlantic's foreign operations. It holds one-third of a 5% interest in the Consortium in Iran through the Iranian Agency Ltd. It also shares some 10,500 square miles on the Gulf of Sirte in Libya with Phillips Petroleum Co.

**AUSONIA MINERARIA (AMI)**, 24 Via Lattuada, Rome, Italy (established in October 1956 in Rome). An Italian company whose shares are held by the Montecatini Edison group. It holds a 60% interest in Libyan oil concessions with Deutsche Erdöl A.G. (DEA) and Société Nationale des Pétroles d'Aquitaine (SNAP) having 20% each.

**AUSONIA MINERARIA FRANCAISE (AMIF)**. Holds interest in Algerian Sahara.

**BAHRAIN PETROLEUM CO., LTD. (BAPCO)**, 485 Lexington Ave., New York 17, New York (incorporated on 11 January 1929 in Canada). A member of the CALTEX group, holds a concession over Bahrain Island as well as offshore and other islands controlled by the Sheik of Bahrain.

**BASRAH PETROLEUM CO., LTD.**, 214 Oxford Street, Oxford Circus, London, W.1. (incorporated in London in July 1938). An affiliate of Iraq Petroleum Co., Ltd. the company's operating fields are in southern Iraq. Ownership and management are the same as IPC.

**BOCHUMER MINERALÖL G.m.b.H. and CO.**, (BOMIN), 50 Bruckstrasse, Bochum, West Germany (founded 1945 in Germany). BOMIN has acquired a 50-year concession to onshore and offshore oil rights in the Truchl States (sheikhdom of al-Fujairah).

**BOSCO MIDDLE EAST CORP.**, Houston, Texas, was granted two concessions in Libya in 1968.

**BRITISH PETROLEUM CO., LTD. (BP)**, Britannic House, Moor Lane, London, E.C.2. (incorporated in London in April 1909). The properties of BP in Iran were nationalized in 1951. This dispute was resolved in 1954 by an agreement under which an international consortium was set up to operate the oil industry in Iran on behalf of the government of Iran. This company is controlled by the British government and has the following particular interests: The Iranian Consortium 40%; Kuwait Oil Co. (through BP Kuwait Ltd.), 50%; Iraq Petroleum Co., 23 1/4%; Basrah, Qatar, and Mosul Petroleum companies, 23 1/4% each; Abu Dhabi Marine Areas, Ltd., 66 2/3%; and Dubai Marine Areas, Ltd., 66 2/3%.

**BRITISH PETROLEUM EXPLORATION CO., (LIBYA), LTD. (BP)**, Britannic House, Moor Lane London, E.C.2. A wholly owned subsidiary of British Petroleum Company, Ltd., which carries out operations on concessions held in Libya.

**CALIFORNIA ASIATIC OIL CO.** (founded December 1954). A wholly owned subsidiary of Standard Oil of California, markets Libyan crude from a subsidiary, American Overseas Petroleum Ltd., in which it holds half interest with Texaco, Inc. Also markets other crude from Saudi Arabia from the Arabian American Oil Company.

**CALIFORNIA TEXAS OIL CORP. (CALTEX)**, 380 Madison Avenue, New York 17, New York (established December 1946). This firm is a service company in the CALTEX group which consists of nearly 100 companies operating in more than 70 countries in the eastern hemisphere. Ownership is held jointly by Standard Oil Co. of California and Texaco, Inc.

**CIRCLE OIL CO.**, wholly owned by G. H. Jett, Mobile, Alabama, and Ashland Oil and Refining Co. Acquired three concessions in Libya in 1966.

**CITIES SERVICE CO.**, 60 Wall Street, New York 5, New York (established September 1910). Cities Service was one of the four companies which held concessions over Egypt's Western Desert. In 1958 the company acquired a 49% share in 6,250 square miles in the Hassi R'Mel area in Algeria. Cities Service also holds a 15% interest in 31,200 square miles in the southern French Sahara and interests in IROPKO in the Persian Gulf.

**CLARK OIL AND REFINING CORPORATION**, 8530 West National Avenue, Milwaukee, Wisconsin (founded July 1934 and assumed present name in 1954). Company holds two concession areas totaling about 5,100 square miles in Libya through its subsidiary Libyan Clark Oil Company. Drilling was to have begun in 1969.

**COMPAGNIE ALGERIENNE DE RECHERCHE ET D'EXPLOITATION DU PÉTROL (CAREP)**. Con-

ducting exploration and production in Algeria. Algerian-French ownership.

**COMPAGNIA ITALIENNE IDROCARBURI (OIRI)**, completely owned subsidiary of the Italian state company, Ente Nazionale Idrocarburi (ENI). Holds and explores concessions in Libya.

**COMPAGNIE DE RECHERCHES ET D'EXPLOITATION DES PÉTROLES AUSAHAKA (CREPS)**, 12-10 Rue Jean-Nicot, Paris, France (founded April 1959). CREPS has a 69,000 square mile concession in Algeria in association with Compagnie des Pétroles d'Algérie (CPA). Royal Dutch Shell owns 35% of CREPS stock, Régie Autonome des Pétroles and Société de Gestion des Participants own 25% each, and Société Nationale de Recherches et d'Exploration des Pétroles en Algérie (REPAL) and others hold the remainder. It has successful discoveries at Edjele, Zarzaitine, and Timgentourine.

**COMPAGNIE DES PARTICIPATIONS DE RECHERCHES ET D'EXPLOITATIONS PÉTROLIÈRES (COPAREX)**.

**COMPAGNIE DES PÉTROLES D'ALGERIE (CPA)**, 7 Rue Daguerre, Algiers (founded in April 1959). An affiliate of CREPS, owned by Royal Dutch Shell group (65%) in addition to French interests. Holds 59,400 square miles in the Sahara in a joint concession with CREPS.

**COMPAGNIE DES PÉTROLES TOTAL (LIBYE) (CPT)**, P.O. Box 984, Tripoli (Incorporated in France in July 1956). CPT is a subsidiary (99.9%) of Compagnie Française des Pétroles (CFP) and holds concessions in three areas of Libya.

**COMPAGNIE DES PÉTROLES (ALGERIE)-CFP(A)**, 126 Rue Michelet, Algiers (established January 1953). Holds concessions in southern Algeria. CFP(A) is controlled 85% by CFP. The company has a 35% interest in 7,800 square miles in Algeria near Tunisia along with Standard Oil Co. (N.J.), 50%, and Petropar, 15%.

**COMPAGNIE FRANÇAISE DES PÉTROLES (CFP)**, 11 Rue de Docteur Lanceroux, Paris VIIIe. (formed in Paris in March 1924). CFP, which the French government controls through 35% of share capital and through 40% of voting rights, has an interest in Middle East production through 23.75% ownership in Iraq Petroleum Co., Ltd., and affiliated companies; 6% in Iranian Oil Participants, Ltd.; 33 1/3% in Abu Dhabi Marine Areas; 33 1/3% in Dubai Marine Areas, Ltd., and 10% in Petroleum Development (Oman), Ltd. CFP is active in Algeria through its subsidiaries.

**COMPAGNIE FRANCO-AFRICAIN DE RECHERCHES PÉTROLIÈRES**, 2 Blvd. Mohamed V, Algiers (Incorporated July 1957, Paris). The company directly and in association with other companies holds exploitation permits in Algeria. Holds 14% interest in El Gassi-El Agreb field, 13% interest in the Tihert region, and 16% interest in Rhourde Nouna oil and gas fields. Also holds 4.87% interest in TRAPES.

**COMPAGNIE LIBANAISE DES PÉTROLES (CLP)**. It is a Lebanese-owned company holding prospecting concessions in Lebanon which are not being used at present.

**COMPAGNIE ORIENTALE DES PÉTROLES D'EGYPTE (COPE) (EASTERN PETROLEUM COMPANY)**, Cairo, Egypt (established February 1957). Acquired rights held by International Egyptian Oil Co.

(IEOC). IEIOC holds 50% of capital; 50% held by the Egyptian government.

**CONORADA PETROLEUM CORP.**, 630 Fifth Avenue, New York (founded December 1948). An exploration subsidiary outside North America for three parent companies: Amerada Petroleum Corp., Continental Oil Co., and Marathon Oil Co. It is active in various areas of Central and South America and Africa.

**CONSORTIUM**. See Lumber Oil Participants.

**CONTINENTAL OIL CO.**, 1300 Main Street, Houston 2, Texas (founded in Delaware, October 1920). Continental has extensive foreign holdings through joint ventures with other companies. It has one-third interest in Conorada Petroleum Corp.; one-third interest in Oaseh Oil Co. of Libya; and various interests in Guntamala, Tunisia, Libya, Somalia, British Somaliland, and the Trucial States.

**CONTINENTAL OIL CO. OF QATAR (CONOCO)**, a wholly owned subsidiary of the Continental Oil Company. Held a 50% interest with Italian Oil Co. of California to offshore concession rights in Qatar which it relinquished in 1968.

**COOPERATIVE ASSOCIATION**. Owned 50% by the Algerian government and 50% by Société Pétrolière Française en Algérie.

**DAIKYO OIL CO.**, Tokyo, Japan (established September 1939). Primarily a refiner and marketer of oil in Japan where it has two refineries with a total capacity of 115,000 barrels per day. It is also associated with the two other Japanese companies—Maruzen Oil Co., and Nippon Mining Co.—in a concession of 1,795 square miles offshore in Abu Dhabi under the name of Abu Dhabi Petroleum Co. (ADPDC).

**DASITESTAN OFFSHORE PETROLEUM CO. (DOPCO)**. Formed in 1965 to operate two offshore concession areas totaling some 2,300 square miles which are held jointly by the National Iranian Oil Co. (NIOC) and Iran Shell N.V., a subsidiary of Royal Dutch Shell.

**DEUTSCHE ERDÖL A.G. (DEA)**, Mittelweg 180, Hamburg 13, West Germany (Incorporated in Germany, 1899; name changed to present in 1911). DEA produces, refines, and distributes crude oil and petroleum products in West Germany. It has foreign holdings which include 20% of Ausanin Mineraria in Libya and offshore and onshore holdings in Dubai, Oman; and Iran.

**DEUTSCHE SCHACHTBAU- UND TIEBOHRGESELLSCHAFT**, a West German company participating in Middle East oil interest in Oman and the Persian Gulf.

**DUBAI MARINE AREAS, LTD. (DUMA)**, Britannic House, Moor Lane, London, England (founded July 1954). Holds offshore concessions in the Persian Gulf sheikhdom of Dubai in the amount of 50% with Dubai Petroleum Co., Deutsche Erdöl, and Sun Oil Company holding the remaining 50%.

**DUBAI PETROLEUM CO.**, 30 Rockefeller Plaza, New York, New York. A wholly owned subsidiary of Continental Oil Co., it is operator for and holds a 55% interest with Deutsche Erdöl A.G. (22%) and Sun Oil Co. (22 1/2%) in a 1,400-square mile concession onshore in Dubai and a 35% interest with British Petroleum (33 1/3%), Compagnie Française des Pétroles (16 1/3%), Deutsche Erdöl A.G. (10%), and Sun Oil Co. (5%) in

1,700 square miles of offshore concession. Production commenced in the Patch field of the offshore concession in 1969.

**EGYPTIAN GENERAL PETROLEUM CORP. (EGPC)**, Elhorin Ousem Abdel Hafez, Heliopolis, P.O. Box 2130, Cairo, Egypt (founded in 1957). An Egyptian government organization supervising all phases of the Egyptian petroleum industry.

**ELIAT HAIFA PIPELINE CO.** Headed by Baron de Rothschild, operates the 16 inch crude pipeline between Eliat on the Gulf of Azov and Haifa Refinery on the Mediterranean. It was purchased in 1968 by the Israeli government.

**ELWERATH OIL COMPANY OF LIBYA**, a wholly owned subsidiary of Gewerkschaft Elwerath, a West German company jointly owned by Deutsche Erdöl A.G. and Standard Oil Co. (N.J.). Holds a one third interest in concessions in Libya and acts as operator for the other one third partners, Deutsche Erdöl A.G. and Wintershall.

**ENTE NAZIONALE IDROCARBURI (ENI)**, 50 Via Terese, Rome, Italy. Founded by the Italian government in February 1953. ENI holds interest in the following: AGIP S.p.A., 60%; AGIP Mineraria S.p.A., 99.75%; SNAM, 100%; and ANIC S.p.A., 51.025%. AGIP Mineraria S.p.A. holds 50% interest in Société Irano-Italienne des Pétroles (SIRIP). National Iranian Oil Company (NIOC) holds the remaining 50% of the 8,842 square mile concession.

**ENTREPRISE DES RECHERCHES ET ACTIVITÉS PÉTROLIÈRES (ERAP)**, 7 Rue Nolaton, Paris XVe, France (established January 1960 in Paris). A state-owned organization formed to merge the former Bureau de Recherches de Pétrole and the Régie Autonome des Pétroles. It has many foreign operations, including Algeria, Libya, the Persian Gulf, Saudi Arabia, Iran, and Turkey.

**ESSENCE ET LUBRIFIANT DE FRANCE (ELF)**. Subsidiary of ERAP - primarily marketing.

**ESSO SIRTE INC.**, 25 Shara Es-Seidi, P.O. Box 565, Tripoli, Libya (founded August 1959 in Delaware). It is a wholly owned subsidiary of Standard Oil Co. (N.J.) which operates and holds a 50% interest in concessions in Libya held by the Libyan-American Oil Co. and Grace Petroleum Co. Libyan-American now holds a 25.5% interest and Grace Petroleum, 24.5%.

**ESSO STANDARD LIBYA, INC.**, 25 Shara Es-Seidi, P.O. Box 385, Tripoli, Libya (founded April 1955 in Delaware). A wholly owned subsidiary of Standard Oil Co. (N.J.) which holds concessions in Libya.

**FARSI PETROLEUM CO. (FPC)**, P.O. Box 3220, 5419 Avenue Karim Khan Zand, Teheran, Iran (established April 1955 in Teheran). FPC is jointly held by National Iranian Oil Co. (NIOC) and Société Française des Pétroles d'Iran in order to act as operator for an offshore concession of some 2,200 square miles in the Persian Gulf. The French company is a subsidiary held by several state-owned French companies.

**GELSENBERG BAZIN AKTIEN GESELLSCHAFT**, 8 Johannstrasse, Gelsenkirchen-Horst, West Germany (founded December 1936). A wholly owned subsidiary of Gelsenkirchener Bergwerks A.G., Essen, holds a 35% interest with Mobil Oil Libya in concessions containing four producing oilfields, and with Mobil holds a 70% interest in the pipeline system terminating at Ras Lanuf.

**GELSENKIRCHENER BERGWERKS AKTIEN GESELLSCHAFT (GBAG)**, Himmtenstrasse 2, Essen, West Germany (established June 1953). Engaged in all phases of coal and crude oil industries. It has holdings in Libya (35%) with Mobil Oil Libya, Ltd. in offshore Oman and offshore Iran.

**GENERAL PETROLEUM CO. (GPC)**, 14 Saliman Busha St., Cairo, UAR. Founded in 1957. An Egyptian government exploration and producing company, a subsidiary of the Egyptian General Petroleum Corp. (EGPC), the Egyptian government organization which supervises all phases of the Egyptian petroleum industry.

**GENERAL PETROLEUM AND MINERAL ORGANIZATION (PETROMIN)**, P.O. Box 757, Riyadh, Saudi Arabia (formed in 1962). PETROMIN is a Saudi Arabian government agency, organized with the Ministry of Petroleum and Mineral Resources to engage in all aspects of the oil and mineral industries. It holds oil concessions in Saudi Arabia in varying types of partnerships with commercial exploration companies. Its operations affiliates include: Petroleum Products Distributing Division, Arabian Geophysical and Survey Co. (ARGAS), 51%; Arabian Drilling Co. (ADC), 51%; and Saudi Arabia Fertilizer Co. (SAFICO), 51%. PETROMIN is the sole national distributor of petroleum products in Saudi Arabia.

**GETTY OIL CO.**, 206 Pennsylvania Building, Wilmington, Delaware (established in November 1928). Getty, with its subsidiary companies, comprises a completely integrated unit in the oil industry as it is involved in production, refining, transportation, and sale of crude petroleum and its products. Getty is operator for a group of companies which were acquired in 1964 and an oil concession in the Persian Gulf off Iran. The company also has a concession in the Saudi Arabia-Kuwait Neutral Zone with the American Independent Oil Co. in this area. Getty holds the entire capital of Pacific Western Oil Co., Ltd. which has a small interest in the Iranian Consortium (9.8%).

**GEWERKSCHAFT ELWERATH**, 28 Hindenburgstrasse, Hanover, West Germany (established 1920). Jointly owned by Deutsche Erdöl A.G. and Standard Oil Co. (N.J.) and has subsidiaries exploring in Libya, Iran, Algeria, and Turkey.

**GRACE PETROLEUM CO.**, 3 Hanover Square, New York, New York (founded June 1955 in Delaware). Grace is a wholly owned subsidiary of W. R. Grace and Company. It is joint owner with Esso Sirte, Inc. and Libyan-American Oil Co. of concessions in Libya.

**GULF INTERNATIONAL OIL CO.** A wholly owned subsidiary of Gulf Oil Corporation, which holds Gulf's 7% interest in the Consortium in Iran.

**GULF OF SUEZ PETROLEUM CO. (GUPCO)**. Owned jointly by the Egyptian General Petroleum Corp. and Pan American-UAR Oil Co., a subsidiary of Standard Oil Co. (Indiana). It holds concessions in the Gulf of Suez and in the Western Desert of Egypt, which include, respectively, the El Morgan field and the El Alamein field.

**GULF KUWAIT CO.** (established 1951 in Delaware). A wholly owned subsidiary of Gulf Oil Corp., the company holds one-half interest in the property being operated by Kuwait Oil Co., Ltd.

**GULF OIL CORP.**, Gulf Building, Pittsburgh, Pennsylvania (founded in August 1922). Holds a 100% interest

In Gulf Kuwait Co. (see above) and 7% in the Iranian Oil Participations, Ltd., through wholly owned subsidiary Gulf International. In Nigeria, Gulf holds onshore and offshore concessions.

**GULF OF LIBYA.** A wholly owned subsidiary of Gulf Oil Corporation, holds and explores Gulf's concessions in Libya.

**HAIFA REFINERIES, LTD.,** Haifa Bay P.O. Box 4, Haifa, Israel (established in Israel in August 1959). Owns and operates a refinery near Haifa with a crude capacity of 107,000 barrels per day and has interest in production of refined products and bunkering services and shipping in Israel.

**HISPANICA DE PETROLEOS (HISPANOIL),** Plaza Vazquez de Mella, 12, Madrid, Spain (established in 1965). A subsidiary of the Instituto Nacional de Industrias of Spain and holds a 28% interest in concessions operated by Aquitaine Libye in Libya.

**HISPANOIL (KUWAIT),** Jointly owned by Kuwait National Petroleum Company and Hispanica de Petroleos, S.A. (HISPANOIL) of Spain in order to explore and develop some 3,475 square miles of offshore and onshore areas relinquished by the Kuwait Oil Company.

**INDUSTRIA NAFTJE ZAGREB (INA),** The Yugoslavian State Oil Agency which acquired a prospecting permit in Jordan in 1968.

**INTERNATIONAL EGYPTIAN OIL CO., INC., (IECC),** 3 Central Ave., Panama (established in 1953). Controlled by AGIP in the amount of 99.82%.

**IRAN OIL CO.** (Incorporated in 1947 in Teheran). A subsidiary of National Iranian Oil Co. In 1965 the company was made responsible for the conduct of foreign trade activities relating to the sale of NIOC oil from its own activities and for the share of the crude oil resulting from the operations of its affiliates and joint ventures.

**IRAN PAN AMERICAN OIL CO. (IPAC),** Teheran, Iran (formed in June 1948 in Teheran). Owned equally by Pan American Oil Co. (totally held by Standard Oil of Indiana) and National Iranian Oil Co., for exploration and production of oil and gas in Iran.

**IRAN SHELL N.V.,** 30 Carel van Bylandtlaan, The Hague, Netherlands (incorporated December 1964 as Shell Exploration and Production Co.; name changed to present in 1965). The company was formed by Royal Dutch Shell as the subsidiary for participations in the Dashtestan Offshore Petroleum Co.

**IRANIAN MARINE INTERNATIONAL OIL CO. (INIMICO),** P.O. Box 3190, 255 Saad Avenue, Teheran (established April 1965 in Teheran) is jointly owned by National Iranian Oil Company (NIOC) and a group of private and state companies; Phillips Petroleum Company, 33 1/3%; AGIP, 33 1/3%; and Hydro-Carbon (India) Ltd., 33 1/3%. The company is operator for a concession for some 3,100 square miles in the Persian Gulf. Oil shows have been discovered, but the find has not yet been declared commercial.

**IRANIAN OFFSHORE PETROLEUM CO. (IROPCO),** P.O. Box 3257, 2 North Kakh Avenue, Teheran, Iran (founded in 1965 in Iran). The company is jointly held by the National Iranian Oil Company (NIOC) and the following US companies: Cities Service Co., Inc., Kerr-McGee Corp., Atlantic Richfield Co., Skelly Oil Co., Sunray DX Oil Co., Superior Oil Co., and Getty Oil Co. The concession covers about 870 square miles next to DOPCO in the central Persian Gulf.

**IRANIAN OIL EXPLORATION AND PRODUCTION CO. (IRANSE Aardolie Exploratie en Productie Mij N.V.)** Teheran, Iran. The company was formed in 1954 in agreement with the Iranian government, National Iranian Oil Co., and the Consortium group to carry out the exploration and production side of the 1954 agreement.

**IRANIAN OIL PARTICIPANTS, LTD.,** 3 Finsbury Square, London, E.C.2. Holding firm for the two operating companies (Iranian Oil Exploration and Production Co. and the Iranian Oil Refining Co.) in Iran; organized in 1954 in an agreement with the Iranian government, National Iranian Oil Co., and the Consortium group. Shareholders are British Petroleum Co., Ltd., 40%; Royal Dutch Shell, 14%; Cie. Francaise des Petroles, 6%; and Standard Oil Co. (N.J.), Mobil Oil Corp., Gulf International Oil Co., Texaco, Inc., and Standard Oil Co. of California, 7% each. The remaining 5% is held by Iricon Agency Ltd. whose owners are: Atlantic Richfield Co., 1/12; American Independent Oil Co. and Signal Oil and Gas Co., 1/12 each; Getty Oil Co., Continental Oil Co., Standard Oil Co. (Ohio), and Tidewater Oil Co., 1/12 each.

**IRANIAN OIL REFINING CO. (Iranse Aardolie Raffinage Mij. N.V.),** Teheran, Iran. Organized in 1954 in agreement with the Iranian government, National Iranian Oil Co., and the Consortium group to carry out the refining responsibilities of the 1954 agreement.

**IRAQ NATIONAL OIL COMPANY (INOC),** Saa' doon Street, Baghdad (incorporated March 1964 in Iraq). The state-owned Iraqi oil company which operates state-owned refineries and which holds concessions in Iraq which are to be developed with France's ERAP as agent.

**IRAQ PETROLEUM CO., LTD.,** 33 Cavendish Square, London, W.1. Affiliated companies produce crude oil elsewhere in Iraq and in Qatar as well as operate a refinery at Tripoli and pipelines through Iraq, Syria, and Lebanon. Parent companies are British Petroleum Co., Ltd., 23.75%; Royal Dutch-Shell, 23.75%; Cie. Francaise des Petroles, 23.75%; Standard Oil Co. (N.J.) and Socony Mobil Oil Co. a joint 23.75% through Near East Development Corp.; and Participations and Explorations Corp. (Gulbenkian Estate), 5%.

**IRICON AGENCY LTD.,** 1 Alhermarle Street, London, W.1. (incorporated in Delaware in April 1955). This holding company controls a 5% interest in Iranian Oil Participants, Ltd. (see Iranian Oil Participants, Ltd.).

**ISRAEL FUEL CORP., LTD. (DELEK),** 6 Ahuzat Bayit Street, Tel Aviv, Israel (incorporated in Israel in December 1950). The company produces, imports, refines, distributes and is involved in bunkering activities.

**ISRAEL NATIONAL OIL CO., LTD.,** an exploration company in Israel.

**JAPANESE PETROLEUM EXPLORATION CO. (JAPEX),** 4, 1-Chome, Ohtemachi, Chiyoda-Ku, Tokyo, Japan (incorporated 1 December 1955). Has acquired the concessions in Sharjah and Ajman formerly held by John Mecom and Union Oil Co. of California.

**JOHN MECOM,** Houston, Texas. Holds the oil rights to Dhufar in Muscat and Oman together with Union Oil Co., which has a one-third interest. He and Union are trying to renew their concessions to onshore and offshore acreage in Umm al-Qaiwain in the Trucial States on the Persian Gulf, and they share a concession in Yemen, which they may have lost.

- JORDAN EXPLORATION CO. LTD.**, Jerusalem, Israel (incorporated in April 1944). Rights later transferred to Lapidoth Israel Petroleum Co., Ltd., for an interest in that group. Later, the group was reorganized to Lapidoth Israel Oil Prospectors Corp., Ltd.
- JORDAN PETROLEUM REFINING CO., LTD.**, P.O. Box 1079, Amman, Jordan. Incorporated in July 1956, the company is involved in oil refining, importing, exporting, storage, and distribution. It operates a refinery at Zerka.
- KERR-McGEE CORPORATION**, Kerr-McGee Building, Oklahoma City, Oklahoma (incorporated in November 1932 in Delaware, name changed in October 1965). Holds gas and oil concessions and leases in the Persian Gulf.
- KUWAIT OIL CO., LTD.** Burgan House, 105 Wigmore St., London W.1. The company carries out operations in Kuwait of exploration, production, refining, storage, and loading of crude oil and products on behalf of BP (Kuwait) and Gulf Kuwait Co.
- KUWAIT SHELL PETROLEUM DEVELOPMENT CO., LTD.** (KSPDC), Shell Centre, London, S.E.1 (registered in 1969 in England). A member of the Royal Dutch Shell group of companies, holds an offshore concession in the Persian Gulf of some 1,500 square miles. Exploration was begun in 1962 and suspended in 1963.
- LAPIDOTH ISRAEL OIL PROSPECTORS CORP. LTD.**, P.O. Box 17106, Tel Aviv (incorporated in 1959). This company was formed to acquire the interest of Lapidoth Israel Petroleum Co., Ltd. and Israel Oil Prospectors, Ltd. These two companies were exploiting in Heletz, Bror, and F. hav fields and held interests in 590 square miles elsewhere in Israel. Part of the concessions in the Dead Sea are held with Jordan Exploration Co. Ltd.
- LAVAN PETROLEUM CO. (LAPCO)**, P.O. Box 3242, 3 Avenue Elizabeth II, Teheran (incorporated in April 1965 in Teheran). Owned jointly by Iran's state-owned NIOC and a group of private US companies—Atlantic Exploration Company 25%, Murphy Middle East Oil Co. 25%, Iranian Sun Oil Co. 25%, and Union Oil Co. of Iran 25%. It will operate concessions on three blocks covering some 2,300 square miles in the Persian Gulf.
- LIBYA SHELL N.V.**, 30 Carel van Bylandtlaan, The Hague, Netherlands (incorporated in April 1957). A subsidiary of Royal Dutch Shell, the company carries on exploratory work on four concessions in Libya.
- LIBYA TEXAS PETROLEUM REFINING CO.** A wholly owned subsidiary of APCO Oil Corp., held three concessions in Libya, granted in 1966 and revoked by the Libyan government in 1968.
- LIBYAN AMERICAN OIL CO. (LAOC)**, Tripoli, Libya (incorporated in May 1955 in Delaware). A wholly owned subsidiary of Sinclair International Oil Co., itself owned by Sinclair Oil Corp., holds a 51% interest with Grace Petroleum Corp. (49%) in one Libyan concession and a 25.5% interest with Grace Petroleum Corp. (24.5%) in Esso Sirte. Production has been centered in the Raguba field.
- LIBYAN ATLANTIC CO. (LAC)**. Jointly owned by Atlantic Richfield and Phillips Petroleum, holds concessions offshore in the Gulf of Sirte in Libya which are operated by Atlantic Richfield.
- LIBYAN CLARK OIL CO.** Wholly owned by Clark Oil and Refining Corp., Milwaukee, Wisconsin, holds two concession areas in Libya, granted in 1966.
- LIBYAN DESERT OIL CO.**, P.O. Box 1018, Tripoli, Libya (incorporated in June 1960 in Delaware). A wholly owned subsidiary of the Texfel Petroleum Corp., was granted a concession in Libya in 1966 that was revoked by the Libyan government in 1968.
- LION PETROLEUM CO. S.A.**, a subsidiary of Monsanto Company, St. Louis, Mo. Obtained rights to Libyan concession 113 in 1966 which was revoked by the Libyan government in May 1968.
- MARATHON INTERNATIONAL OIL CO.**, 539 So. Main St., Findlay, Ohio (incorporated in 1887 as Ohio Oil Co., name changed in 1962). The company operates the Marathon Petroleum Libya Ltd., which has one-third interest in Oasis Oil Co. in Libya.
- MARUZEN OIL CO.**, Osaka, Japan (incorporated in November 1933 in Kobe, Japan). The company is primarily a refining and marketing company. In 1967, Maruzen, with Dai-kyo Oil Co. and Nippon Mining Co., acquired concession rights to two offshore blocks in Abu Dhabi totaling some 4,416 square miles under the name of Abu Dhabi Petroleum Development Co.
- MEDITERRANEAN REFINING CO. (MEDRECO)**, Beirut, Lebanon. Jointly owned by California Texas Oil Corp. and Mobil Oil Corp.; operates a refinery near Sidon, Lebanon, at the terminal of the Trans-Arabian pipeline.
- MERCURY PETROLEUM CO. S.A.** Wholly owned by George H. Jett, Mobile, Ala., obtained concession 112 in 1966, which was revoked by the Libyan government in May 1968.
- MIDDLE EAST OIL DEVELOPMENT CO.** (see MITSUBISHI).
- MITSUBISHI OIL COMPANY, LTD.**, Tokyo, Japan (incorporated as MITSUBISHI SEKIYI KABUSHIKI KAISHA in February 1931 in Tokyo). Oil refiners, marketers, importers. It acquired in 1968 a 2,500 square mile concession in Abu Dhabi under the name of Middle East Oil Development Co.
- MOBIL EXPLORATION MEDITERRANEAN, INC.** A wholly owned subsidiary of Mobil Oil Corp., has exploration permits and producing fields in Turkey.
- MOBIL OIL CORP.**, 150 East 42nd Street, New York 17, N.Y. (incorporated in 1882 in New York). Mobil Oil and its affiliates are participating in exploratory works in Turkey, Libya, Nigeria, Iraq, Iran, Saudi Arabia, Abu Dhabi, and Qatar. The company has 10% interest in ARAMCO. Through its ownership of 50% interest in the Near East Development Corp., the company holds 11 1/8% share in Iraq Petroleum Co., Ltd., and its affiliates. The company's interest in Iran is maintained through a 7% interest in Iranian Oil Participants, Ltd. Through affiliates the company owns part interest in refineries in Iran, Lebanon, Saudi Arabia, Turkey, Gabon, and Rhodesia.
- MOBIL OIL IRAN, INC.** Company owns 7% interest in Iranian Oil Participants, Ltd.
- MOBIL OIL LIBYA, LTD.**, P.O. Box 690, Tripoli (incorporated in Delaware in 1944; assumed present name in 1963). A wholly owned subsidiary of Mobil Oil Corp., it holds a 65% interest with Gelsenberg Benzin A.G. in Libyan concessions, which cover the Farrud, Amal, Ora and Hofra oilfields. The partners also own a 70% interest with American Overseas Petroleum Co. in the 175-mile pipeline and the terminal at Ras Lanuf.

**MOSUL PETROLEUM CO., LTD.**, 33 Cavendish Square, London W.1. (incorporated in October 1936). Company owned by BP Exploration Co. 23.75%, Shell Petroleum Co. 23.75%; Compagnie Française des Pétroles 23.75%, Near East Development Corp. 23.75%, and Participations and Explorations Corp. 5%. The company owns a concession in northwest Iraq.

**MURCO LIBYA OIL CO.**, Murphy Building, 200 Jefferson Avenue, El Dorado, Arkansas. A wholly owned subsidiary of Murphy Oil Corp., handles Murphy's interest in Libyan concessions operated by Aquitaine Libye.

**MURPHY OIL CORP.**, Murphy Building, 200 Jefferson Avenue, El Dorado, Arkansas (incorporated in May 1963). Has interest in oil concessions in Libya and Iran, which it exercises through subsidiaries with the prefix of MUPCO Co.; has a 25% interest in the Atlantic group, comprising four companies which have been granted 50% participation in petroleum rights in Iranian offshore areas in the Persian Gulf. National Iranian Oil Co., which grants the rights, retains a 50% interest.

**NAPHTHA ISRAEL PETROLEUM CORP., LTD. (NIP)**. Operates gasfields at Zohar, Kidor, and Kenain.

**NASR OIL CO.** (formerly Anglo-Egyptian Oil Fields Ltd. (AEO), then Al Nasr Oilfields Co.), Shell House, Cairo. AEO was owned by the government, Shell and BP. Properties were sequestered by the government in 1956. The government owned about 55% of Al NASR, which was established on 4 January 1962. This UAR company holds property at Ras Gharib and Hurghada on the western shore of the Red Sea under lease from the government and from Mobil Oil Egypt Inc. in the Sinai Peninsula. A refinery is located at Suez. The company was reorganized in March 1964 following nationalization of some Shell properties; details of ownership are not known. The oilfield properties are now controlled by the General Petroleum Co., while the refinery remains a separate firm, Nasr Oil Co. Both new firms are controlled by the Egyptian General Petroleum Corp.

**NATIONAL IRANIAN OIL CO. (NIOC)**, P.O. Box 1863, Teheran, Iran (incorporated in April 1951). The company was formed by the Iranian government following the nationalization of the oil industry in Iran in order to engage in all phases of oil operations. In October 1954, NIOC signed an agreement with the Consortium, forming two operating companies, one for exploration and producing and one for refining, to operate on NIOC's behalf. NIOC retains ownership of these companies' assets and remains responsible for their non-basic services. Each Consortium member in Iran is represented by a trading company which engages in purchases of crude oil from NIOC. NIOC is responsible for oil marketing and distribution in Iran and for the development of Iran's petrochemical industry. Since 1957, NIOC has concluded partnership agreements in which the division of profits is based on 75/25 principle in favor of Iran. Such agreements have been signed with ENI, Pan American International Oil Co., Dashtestan Offshore Petroleum Co., Shell, Getty, Atlantic, Lavan, Farsi, Iranian Marine International Oil Co., Persian Gulf Petroleum Co., and ERAP.

**NATOMAS CO.**, International Building, St. Mary's Square, 601 California St., San Francisco, California.

A partner in the Sinclair group which is acting as a contractor for the Saudi state-owned company, PETROMIN.

**NEAR EAST DEVELOPMENT CORP.**, 150 East 42d St., New York (incorporated in Delaware in February 1928). A holding company which owns a 23.75% interest in IPC. Shares are held equally by Standard Oil Co. (N.J.) and Mobil Oil.

**NELSON BUNKER HUNT**. Wholly owned subsidiary of Hunt International Petroleum Co., a part of Hunt Oil Co., owned by H. L. Hunt and family.

**NIPPON MINING CO.**, Tokyo, Japan (incorporated as NIPPON SEIKIYU KABUSHIKI KAISHA, in April 1929 in Tokyo). Operates nine mines, one smelter, four factories, and two refineries with a total capacity of 109,000 barrels per day in Japan. It also is associated with Maruzen Oil Co. and Dai-kyo Oil Co. in a concession offshore in Abu Dhabi under the name Abu Dhabi Petroleum Development Co.

**OASIS OIL CO. OF LIBYA**, Box 395, Tripoli, Libya (incorporated in Delaware in 1960). The company conducts exploration and production operations in Libya on behalf of Marathon Oil Co. of Libya, Continental Oil, Amerada Petroleum, Shell Exploration and Production Mij N.V.

**OAPEC.** (Organization of Arab Petroleum Exporting Countries.) Members include Abu Dhabi, Qatar, Bahrain, Dubai, Saudi Arabia, Kuwait and Libya.

**OCCIDENTAL PETROLEUM CORP.**, The Kirkeby Center, 10889 Wilshire Blvd., Los Angeles, Calif. (Incorporated in 1920 in Calif.). Operates its holdings in Libya through its wholly owned subsidiary, Occidental of Libya; the company acquired Libyan concessions in 1966 in the Sirte Basin and in 1968 began production from the Idris field.

**OMNIUM DE RECHERCHE ET D'EXPLOITATION PÉTROLIÈRES (OMNIREX)**. 100% French-owned company operating in Algeria.

**OPEC.** (Organization of the Petroleum Exporting Countries), established in September 1960. Members include Abu Dhabi, Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and Venezuela.

**PAN AMERICAN UAR OIL CO.** A partner with the government-owned Egyptian General Petroleum Corp. in the Gulf of Suez Oil Co. (GUPCO), is a subsidiary of the American International Oil Co., itself wholly owned by Standard Oil Co. (Indiana).

**PAN AMERICAN LIBYA OIL CO. (PANAM)**. A wholly owned subsidiary of American International Oil Co., which is owned by Standard Oil Co. (Indiana); operates concessions held by American in Libya.

**PARTICIPATIONS AND EXPLORATIONS CORP. (PARTEX)** (incorporated in Panama). Company owns 5% interest in Iraq Petroleum Co., Ltd., also in Basrah Petroleum Co., Ltd.; Mosul Petroleum Co., Ltd.; Qatar Petroleum Co., Ltd.; Abu Dhabi Petroleum Co., Ltd.; Petroleum Services (Middle East), Ltd.; Syria Petroleum Co., Ltd.; and Petroleum Development (Oman), Ltd.

**PAZ OIL CO., LTD.**, 4 Hagefen St., P.O. Box 2434, Haifa, Israel (incorporated in September 1959 in Israel). Engages in all aspects of the oil business in Israel.



- PERSIAN GULF PETROLEUM CO. (PEGUPCO)**, P.O. Box 2693, Teheran. The company is jointly owned by the NIOC and a group of West German companies: Wintershall A.G., Deutsche Schmelz- und Tiefbohrergesellschaft m.b.H., Gelsenkirchener Bergwerks A.G., Gewerkschaft Elwerath, Scholven Chemie A.G., Deutsche Erdöl A.G., and Preussag A.G. The company will be operator for the concession of some 1,500 square miles in the Persian Gulf.
- PETROFINA S.A.** (incorporated in February 1920 in Belgium as Compagnie Financière Belge des Pétroles, name changed June 1957), 33 Rue de la Loi, Brussels, Belgium. Company operates and participates in exploration and production in Angola and Morocco.
- PETROLEUM DEVELOPMENT (Oman), LTD.**, 8 York Road, London, S.E.1. A subsidiary of Royal Dutch Shell holding 85% interest in Muscat and Oman, with CFP and PARTEX. Company holds concessions in Muscat and Oman.
- PETROLEUM SERVICES LTD.** (Israel). Associated with Burmah Oil Company.
- PHILLIPS PETROLEUM CO.**, Phillips Bldg., Bartlesville, Oklahoma. The company holds a 37.34% interest in American Independent Oil Co. which operates in Kuwait. The company participation includes a one-half interest in onshore and offshore concessions in Libya; participation in a consortium of three companies operating an onshore concession in Abu Dhabi; participation in exploration in Saudi Arabia; oil concession interests in Algerian Sahara; and participant in exploratory and production activities in Nigeria. In the UAR the company together with Egyptian General Petroleum Corp. jointly holds concessions comprising the coastal belt from Cairo to the Libyan border.
- PHILLIPS PETROLEUM CO., LIBYA.** Operates Phillips Petroleum Co. concessions in Libya.
- PHOENICIA OIL CO. SAL**, Chammos Bldg. Trablous St. Beirut, Lebanon. The company, which markets refined petroleum products and lubricating oil, was formed in 1965 by CALTEX and Mediterranean Oil Shipping and Transport (MEDCO).
- PREUSSAG A.G.**, Leibnizstr. 9, Hannover 3, West Germany (incorporated in December 1923 in Germany). A mining, metals, and oil company with holdings in the Persian Gulf.
- PURE ITALIA INC.**, a wholly owned subsidiary of Union Oil Co. of California. Holds interest in the Libyan concession of Ausonia Mineraria, through an agreement with it and Westates Italia Co. for the exploration and development of Ausonia's concession which will ultimately yield Pure 25% from the income of the joint operation.
- QATAR PETROLEUM CO., LTD.** (registered in 1936 as Petroleum Development (Qatar) Ltd., name changed in 1953). P.O. Umm Suid, Qatar. Company operates oil concessions in Qatar.
- ROYAL DUTCH PETROLEUM CO. (N.V. Koninklijke Nederlandsche Petroleum Mij)**, 30 Carel van Bylandtlaan, The Hague, Netherlands (incorporated in 1890 at The Hague). Company is one of the two parent companies of the Royal Dutch Shell group, holding a 60% interest. Shell Transport and Trading Co. holds the remaining 40%. Group activities are managed through two jointly owned parent companies—N.V. de Bataafsche Petroleum Mij, and Shell Petroleum Co. Ltd.; the company operates oil concession in Nigeria, Algeria, Libya, Gabon, Iran, Iraq, Qatar, Oman, Abu Dhabi, and Turkey.
- SAN JACINTO PETROLEUM CORP.**, 630 Fifth Ave. NYC and 1107 San Jacinto Bldg., Houston 2. Owned 84% by Continental Oil Co.
- SCHOLVEN CHEMIE A.G.**, 227 Dorstenerstrasse, Gelsenkirchen Buer, West Germany (incorporated in July 1935 in Germany). A wholly owned subsidiary of Vereinigte Elektrizität und Bergwerks A.G. (VEBA) of West Germany. It holds a 6% interest in Persian Gulf Petroleum Company in Iran and holds concessions in northeastern Libya.
- SHELL DE L'AFRIQUE EQUATORIALE** (registered in 1954 in Brazzaville). Company imports and distributes petroleum products in Gabon, as well as other African countries.
- SHELL-BP Petroleum Development Co. of Nigeria, Ltd.** (incorporated in 1951), 40 Marina, Lagos, Nigeria. Company, jointly owned by Shell Petroleum Co. and BP Exploration Co., explores for and produces oil in Nigeria.
- SHELL Co. of Libya, Ltd.** (registered in 1953), P.O. Box 402, Tripoli. Company imports and distributes petroleum products.
- SHELL Co. of Nigeria, Ltd.** (registered in 1938), 38-39 Marina, Lagos. Company imports and distributes petroleum products.
- SHELL Co. of Qatar, Ltd.** (registered in 1953), Doha, Qatar, Arabian Gulf. Company operates offshore concessions in Qatar.
- SHELL De Tunisie** (registered in 1922), 24-26 Place de l'Afrique, Tunis. Company imports and distributes petroleum products in Tunisia.
- SHELL Co. of West Africa, Ltd.** (registered in 1960), Shell Centre, London, S.E.1. Company imports and distributes petroleum products in Angola and other African countries.
- SHELL Exploratie En Productie Mij (Libya) N.V.** (incorporated in 1964 in The Hague), P.O. Box 1101, Tripoli, Libya. Company owns 1/2 interest in Amerada Petroleum Corp. Libyan holdings for exploratory and producing activities.
- SHELL Gabon** (incorporated in 1960), Boite Postale 146, Port Gentil, Gabon. Company is wholly owned member of the Royal Dutch Shell group and is the principal operator of the Shell/SPAFE joint venture for exploration and exploitation in Gabon. Company also engaged in offshore exploration in a joint venture with Gulf Oil, with the latter as operator.
- SHELL TRANSPORT AND TRADING CO., LTD.**, 23-29 Wulbrook, London, E.C.4. The Shell company is one of the two parent companies of the Royal Dutch Shell group holding a 40% interest (see Royal Dutch Petroleum Co.).
- SIGNAL OIL AND GAS CO.**, 1010 Wilshire Blvd., Los Angeles 17 (incorporated in 1928). Company has an interest in Neutral Zone production through a 30.16% interest in American Independent Oil Co. and 0.8333% interest in Iranian Oil Participants, Ltd., through Signal International.
- SINCLAIR INTERNATIONAL OIL CO.**, 600 Fifth Avenue, New York (incorporated in July 1961 in Delaware). Company, a subsidiary of Sinclair Oil Corp.,

- coordinates the activities of subsidiaries engaged in foreign operations. Subsidiary companies include: Libyan American Oil Co., and Sinclair Nigerian Oil Co.
- SINCLAIR OIL CORP.**, 600 Fifth Avenue, New York (incorporated in September 1919 in New York). Through Sinclair International Oil Co., engages in oil exploration in Saudi Arabia and holds a 25% interest in concessions totaling 1,380 square miles in Nigeria.
- SKELLY OIL CO.**, Box 1650, Oil Center Bldg., South Boulder, Tulsa, Oklahoma (incorporated in August 1919 Delaware). Holds oil properties in the United States and participates in a group holding concessions offshore in the Persian Gulf.
- SOCIEDADE NACIONAL DE REFINACAO DE PETROLEOS**, Rue Tomas Ribeiro 97, Lisbon, Portugal (SONAREP). A subsidiary of Sociedade Nacional de Petroleos (SONAP).
- SOCIÉTÉ AUXILIAIRE DE L'ENTREPRISE DE RECHERCHES ET D'ACTIVITÉS PÉTROLIÈRES (AUXIRAP)**. A wholly owned subsidiary of Entreprise de Recherches et d'Activités Pétrolières (ERAP), a French state-owned company, holds a 14% interest in the concessions operated by Aquitaine Libya in Libya.
- SOCIÉTÉ COOPERATIVE DES PÉTROLES**, 94 Kasr El Eini St., Cairo, Egypt. A marketing company with bunkering facilities at Suez, Pt. Said, and Alexandria.
- SOCIÉTÉ DES PÉTROLES D'AQUITAINE (SNPA)**. 100% French-owned company operating in Algeria.
- SOCIÉTÉ NATIONALE DE RECHERCHE ET D'EXPLOITATION DES PÉTROLES EN ALGERIE (S.N. REPAL)**.
- SOCIÉTÉ DE PARTICIPATIONS PÉTROLIÈRES (PETROPAR)** (incorporated in 1957, Paris), 7 Rue Nèlaton, Paris 15e, France. Company is involved in exploration and development directly and in association with other companies; permits are held in Algerian Sahara.
- SOCIÉTÉ DE PROSPECTION ET D'EXPLOITATION PÉTROLIÈRES EN ALSACE (PREPA)**.
- SOCIÉTÉ DE RECHERCHES ET D'EXPLOITATION DE PÉTROLE (EURAFREP)** (incorporated September 1957, Paris). Exploration, development, and production of oil and natural gas. The company holds, directly or in association with other companies, concessions in Algerian Sahara.
- SOCIÉTÉ DE RECHERCHES ET D'EXPLOITATION DES PÉTROLES EN TUNISIE (SEREPT)** (incorporated in 1941 in Tunis). ERAP holds 56.93% interest, Tunisian government holds 23.87% interest, Cie Française des Pétroles holds 10.94% interest, COFIREP holds 2.77% interest, and REPERANCE holds 5.49% interest; company is engaged in exploration and production in Tunisia.
- SOCIÉTÉ DE TRANSPORT DU GAZ NATUREL D'HASSI R'MEL A ARZEW (SOTHRA)**. An Algerian-French company which operates pipelines in Algeria.
- SOCIÉTÉ DES PÉTROLES D'AFRIQUE ÉQUATORIALE (SPAFE)** (incorporated in 1949 in Equatorial Africa), P.O. Box 524, Port Gentil, Gabon. ERAP holds a 63% interest. Company undertakes exploration and development in Equatorial Africa. Wells have been drilled and are producing at Pointe Clairette, Ozouri, Tchenque, and M'Bega in the Ogooue Delta zone, Gabon. Company participates with Shell Gabon in a joint venture for exploration and exploitation of 3,580 square miles in Gabon.
- SOCIÉTÉ DES PÉTROLES BP DE MAROC** (incorporated in 1947, Morocco), 53 Rue Allal ben Abdallah, Casablanca, Morocco. Company is engaged in importing and distributing petroleum products in Morocco. The company is a subsidiary of the British Petroleum Co., Ltd.
- SOCIÉTÉ DES PÉTROLES BP DE TUNISIE**, 86 Ave. Hedi Chajer, Tunis (incorporated in 1948 in Tunis). Company is engaged in importing and distributing petroleum products in Tunisia. The company is a subsidiary of the British Petroleum Co., Ltd.
- SOCIÉTÉ ÉQUATORIALE DE RAFFINAGE**, B.P. 564, Port Gentil, Gabon (incorporated in 1965, Port Gentil, Gabon). Company operates a 625,000-tons-per-year refinery at Port Gentil, Gabon.
- SOCIÉTÉ FRANÇAISE DES PÉTROLES D'IRAN (SOFIRAN)**, 7 Rue Nèlaton, Paris XVe (incorporated in Paris in October 1964). A subsidiary formed to exploit oil in Iran and held by the state-owned French company ERAP 45% and by two other ERAP subsidiaries—SNPA and AUXIRAP.
- SOCIÉTÉ IRANO-ITALIENNE DES PÉTROLES (SIRIP)**, P.O. Box 1434, 54 Ave. Haghoughi, Teheran (incorporated in September 1957 in Iran). Jointly owned by two state corporations, ENI and NIOC, to operate three concessions offshore and onshore in Iran.
- SOCIÉTÉ IVOIRENNE DE RAFFINAGE**, B.P. 1269, Abidjan (incorporated October 1962 in Abidjan, Ivory Coast).
- SOCIÉTÉ MALGACHE DE RAFFINAGE**. Operates a refinery at Tamatave, a joint venture between Madagascar and ERAP and other international oil companies that have subsidiaries trading in Madagascar.
- SOCIÉTÉ NATIONALE DES PÉTROLES D'AQUITAINE (SNAP)**, Tour Aquitaine, 92 Courbovoile, France (incorporated in December 1941 in France). Company participates as a 20% shareholder in one group of concessions in Libya with Deutsche Erdöl A.G. and Ausonia Mineria and with itself as operator in another group comprising Hispanica de Petroleos, AUXIRAP, and Mureo Libya Oil Co. in which SNAP holds 28%.
- SOCIÉTÉ NATIONALE POUR LA RECHERCHE, LA PRODUCTION, LE TRANSPORT, LA TRANSFORMATION, ET LA COMMERCIALISATION DES HYDROCARBURES (SONATRACH)**, Immeuble Mauretania, Agha, Algiers, Algeria (formed by government decree in Algeria, December 1963). Algerian state undertaking formed to participate in all phases of the oil industry. It represents the Algerian government in the French-Algerian Cooperative Association. SONATRACH directly controls areas ceded to it by the Algerian government on which exploration and development are in progress.
- SOCIÉTÉ NATIONALE DE RECHERCHE ET D'EXPLOITATION DES PÉTROLES EN ALGERIE**, Chemin du Reservoir, Hydra Algiers (incorporated in 1946 in Algiers). Company is owned jointly by SONATRACH and SOFREPAL, a company owned by ERAP to represent French interest in S.N. REPAL. Company engaged in oil production and refining, operates some concessions jointly with Cie Française des Pétroles (Algerie).

**SOCIÉTÉ PÉTROLIÈRE DE GERANCE.** Operates pipeline in Algeria; 50% owned by Entreprise de Recherches et d'Activités Pétrolières.

**SOCIÉTÉ SAHARIENNE DE RECHERCHES PÉTROLIÈRES (SSRP).** Owned 44% by British Petroleum and 56% by others; operates in Algeria.

**SONOL ISRAEL LTD. (SONOL),** 8 Bank St., P.O. Box 214 Haifa, Israel (incorporated in 1952 as Socony Vacuum Oil Co., Israel, Ltd., later Mobil Oil Israel Ltd., in 1955 and then name changed to Sonol Israel 1957). The company is now a wholly owned subsidiary of Sonneborn Associates Petroleum Corp., New York, and handles the distribution, refining, and marketing of petroleum products in Israel.

**STANDARD OIL CO. OF CALIFORNIA (SOCAL),** 225 Bush St., San Francisco. Company has exploration, marketing, and producing interests in Libya through California Ashtie Oil Co. and is engaged in refining and marketing in Turkey through Caltex Mediterranean companies.

**STANDARD OIL CO. (INDIANA),** 910 South Michigan, Chicago 80 (incorporated in 1889). The company is engaged in all aspects of oil industry through its subsidiaries; wholly owns Pan American UAR Oil Co., owns 50% interest in Gulf of Suez Petroleum Co.; wholly owns Pan American Libya Oil Co.; wholly owns Pan American International Oil Co., and owns 50% interest in Iran Pan American Oil Co.

**STANDARD OIL CO. (N.J.),** 30 Rockefeller Plaza, New York (incorporated in 1882 in New Jersey). Through subsidiaries the company engages in production, transport, refining, and marketing of petroleum and petroleum products. Subsidiaries include: Esso Africa Inc. (100%), Esso Standard Libya Inc. (100%), Arabian Oil Co. (30%), Iranian Oil Participants Ltd. (7%), Iraq Petroleum Co., Ltd., and associated companies (12%).

**STANDARD OIL CO. (OHIO),** Midland Bldg., Cleveland 15 (incorporated in 1870 in Cleveland). Company has one-twelfth of 5% interest in Iranian Oil Participants, Ltd.

**SUEZ OIL PROCESSING COMPANY (SOPC),** also known as Suez Oil Manufacturing Co. Founded in 1962 by the Egyptian General Petroleum Corporation to operate the 60,000 barrel-per-day former government oil refinery at Suez.

**SUN OIL COMPANY,** 1608 Walnut St., Philadelphia, Pa. (incorporated in May 1901 in New Jersey as Sun Company, name changed to Sun Oil in December 1922). Company has many subsidiaries operating in the Middle East, including Dubai Sun Oil Co. which holds a 5% interest in Dubai Marine Areas Ltd. and 22½% interest in Dubai Petroleum Co., both holding concessions in Dubai.

**SUNRAY DX OIL CO.,** P.O. Box 2039, Sunray Bldg., Tulsa, Okla. (incorporated in February 1920 in Delaware). Company participates in the Iranian Offshore Oil Co. in the Persian Gulf through its subsidiary Sunray Iranian Oil Co. It also owns a 2.94% interest in American Independent Oil Co., which holds one-half interest in oil rights in the Neutral Zone. Through Sunray Nigeria Inc., the company holds 25% interests in 1,380 square miles in Nigeria.

**SUPERIOR OIL CO.,** P.O. Box 1521, Houston, Texas (incorporated in October 1936 in California and in April 1963 in Nevada). Company owns and operates oil and gas properties in the United States and Canada and holds an interest in the Iranian Offshore Petroleum Co. in the Persian Gulf.

**SYRIAN AFAB DISTRIBUTING CO., PETROLEUM PRODUCTS (SADCO),** formed in 1966 in Syria, P.O. Box 40, Hijaz St., Damascus, Syria. Company is a state undertaking, the sole marketer of petroleum products in Syria.

**SYRIAN GENERAL PETROLEUM ORGANIZATION (SGPO).** The Syrian state organization which supervises all aspects of petroleum operations in Syria.

**TENNECO OIL CO.,** Tennessee Bldg., 1010 Milam St., P.O. Box 2511, Houston, Texas (incorporated in February 1900 in Delaware). Company holds a 20% interest in the AUXIRAP concession in Saudi Arabia, provided AUXIRAP, acting as contractor for the Saudi Arabian state company, PETROMIN, is able to find commercial deposits of oil and a producing company is formed. Company also has established oil reserves in a coastal area near the mouth of the Brass River, Nigeria, and has completed an agreement for use of the terminal and loading facilities to be built by other Nigerian operators.

**TEXACO INC.,** 135 East 42d St., New York 17 (incorporated in Delaware in August 1926 as the Texas Co. changed to Texaco Inc. in May 1959). The company has a share in Middle East production and refining through a 30% ownership in Arabian American Oil Co. and 7% interest in the Iranian Oil Participants, Ltd., through Texaco Iran Ltd. It has a one-half interest in Bahrain's production and refining through a 50% interest in the CALTEX group of companies—these include Bahrain Petroleum Co., Ltd.; the company is also engaged in marketing of petroleum in Morocco.

**TEXAS GULF PRODUCING CO.,** Bank of the Southwest Bldg., Houston 2, Texas (incorporated in Delaware in April 1931). A subsidiary, Libyan American Oil Co., is carrying on an exploration program of 10,600 square miles in Libya.

**TEXTFEL PETROLEUM CORP.,** Kirkeby Center, 10889 Wilshire Blvd., Los Angeles, Calif. (incorporated in Delaware). Holds one concession area in Libya through its wholly owned subsidiary, Libyan Desert Oil Co.

**TIDEWATER OIL CO.,** 4201 Wilshire Blvd., Los Angeles, California (incorporated in Delaware in March 1926). Subsidiary of Getty Oil Co. Effective September 1967, company merged with Getty Oil Co.; foreign activities include a one-third interest in a 4,770-square mile concession in Turkey. One-twelfth of 5% is held in Iranian Oil Participants Ltd.

**TOTAL NIGERIA LTD.** (incorporated in 1956, Lagos, Nigeria), a subsidiary of Compagnie Française des Pétroles, 26-28 Marina St., Lagos, Nigeria. Company is engaged in importing and distributing petroleum products in Nigeria.

**TRANS ARABIAN PIPELINE CO.,** Tapline, Beirut, Lebanon (incorporated in Delaware in March 1945). Tapline operates 754 miles of 30-31 inch pipeline from Qaisumah to Sidon as part of the 1,024 miles of this system. Tapline is wholly a subsidiary of the Arabian American Oil Co.

**TURKISH PETROLEUM CORP.**, Turkiye Petrolleri Anonim Ortakligi, Mudafaa Caddesi 22, Bakanliklar, Ankara, Turkey (incorporated in December 1954). A Turkish state-owned company, it owns exploration, production, pipeline, and refinery rights under the Petroleum Act of Turkey, as well as right to form subsidiary companies with Turkish and/or foreign capital to deal in all manner of petroleum enterprises. The corporation holds a 55% interest in Petro-chemicals Corp. (PETKIM), a 51% interest in Isiragaz Corp., and a 55% interest in Isilit Co. Ltd.

**TURKSE SHELL N.V.**, 30 Carel van Bylandtlaan, The Hague (incorporated in August 1957 in the Netherlands). A wholly owned subsidiary of Royal Dutch Shell group, holds exploration permits and a small producing field in Turkey.

**UNION OIL COMPANY OF CALIFORNIA**, Union Oil Center, 461 South Boylston St., Los Angeles, Calif. (incorporated in October 1890). Holds oil interests in Ras al Khaimah, Umm al Qaiwain on the Persian Gulf, and Dhofar on the Arabian Sea and Libya with Ausonia Mineraria; company signed an agreement with the Republic of Dahomey on the west coast of Africa for on-shore and offshore exploratory concessions. In 1967, its subsidiary, Union Oil Co. of Nigeria, acquired an exploration license for offshore areas of Western Nigeria.

**UNION RHEINISCHE BRAUN KOHLEN KRAFT-STOFF A.G.**, 5047 Wesseling, Bez, Cologne, West

Germany (incorporated in January 1937 in Germany). Holds concessions in Libya.

**WESTATES ITALO CO.** A wholly owned subsidiary of Westates Petroleum Co., sharing in Libyan oil concessions through an agreement with Ausonia Mineraria which will ultimately yield the 25% of the income from joint exploration and development activities with Pure Italia Inc. for Ausonia.

**WESTATES PETROLEUM CO.**, 811 West Seventh St., Los Angeles, California (incorporated in Delaware in August 1959 and assumed present name in December 1959). Holds an interest in the Libyan concession of Ausonia Mineraria through its wholly owned subsidiary Westates Italo Co.

**WESTERN DESERT PETROLEUM CO. (WEPCO).** Formed in 1967 as a joint enterprise of the Egyptian General Petroleum Corp. and Phillips, to operate the 375,000-square mile concession held by Phillips, west of Alexandria in the western desert of Egypt.

**WINTERSHALL A.G.**, August Rostbery Haus, P.O. Box 52, Kassel, West Germany (incorporated in 1921 in Germany). Participates as joint partner and operator with another German firm, Elwerath, in one Libyan concession and a half interest with Deutsche Erdöl A.G. and one-third interest with Elwerath and Deutsche Erdöl in others in Libya. Also operator for concession in Oman with Shell, Union Carbide, CFP and others.